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Original Articles.

THE SURGICAL ASPECTS OF PANCREATITIS.*

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Balzer, in 1879, first described acute pancreatitis with fat necrosis. Little attention was attracted to the subject, however, and it was not until Fitz, ten years later, wrote his classical papers that the medical world really became aware of the inflammatory diseases of the pancreas. Fitz soon after pointed out the fact that many supposed cysts of the pancreas due to traumatism were really accumulations of fluid in the lesser cavity of the peritoneum and the omental bursæ.

A proper understanding of chronic pancreatitis has been largely due to Robson, who first noticed the disease in connection with his operative work upon the biliary tract. In fact, the surgical study of the inflammatory diseases of the pancreas may be said to be the result of an inquiry into the causation of some of the complications of gallstone disease. The reason for this depends upon certain anatomic facts. Brewer, discussing the question from this standpoint, calls attention to the embryologic development of the organ. The pancreas is a racemose gland without a firm capsule, its protected situation defending it from injury. It is originally formed of two offshoots from the intestinal tube, each having a duct communicating with the intestine. The two buds soon coalesce, the upper channel, known as Santorini's duct, becomes obsolete and the inferior or duct of Wirsung, carries on the function. Later investigations show that the duct of Santorini is not usually completely closed, although ordinarily functionless. Schirmer found that in only two out of 105 cadavers was this duct absent, and in 53 it was capable of carrying the entire secretion of the gland through its intestinal orifice, which is situated about one and one-half inches above the opening of the pancreatic duct of Wirsung. It is to be noted that as the pancreas develops, it is completely surrounded by peritoneum, the posterior layer in later life becoming infiltrated with fat, changing its character; and aiding to account for the direction of diffusion of material escaping from the pancreas. The common duct of the liver passes around the head of the pancreas between it and the second part of the duodenum. For one and one-half inches the common duct lies fused or in close contact with, the main pancreatic duct and in the submucous tissue, joins with it, forming the ampulla of Vater. The joint opening on the duodenal surface is situated four inches below the pylorus.

It is easily seen that a gallstone may obstruct the common intestinal orifice without blocking the pancreatic duct, or at any point in the lower inch and a half of the common duct, may exert injurious pressure upon the pancreatic duct, or a stone may occlude it entirely at the diverticulum of Vater, thus explaining the etiologic relationship existing between pancreatitis and gallstone disease.

This brings us to the effect of this pressure on the pancreas. Hildebrand experimentally ligated the pancreatic duct and the result was acute pancreatitis, usually of the hemorrhagic type, with or without fat necrosis. Opie repeated Hildebrand's experiments with the same results. He also found that injecting the pancreas with irritating fluids through the duct would produce acute pancreatitis, and in Halsted's case the postmortem examination developed the fact that a stone at the papilla had so obstructed the opening that bile had passed throughout the pancreatic ducts, causing the fatal pancreatitis. Evens, in one case of fat necrosis, at autopsy found the pancreas stained with bile, even in the tail. Flexner, in experimental work, demonstrated that acute pancreatitis resulted from the injection into the ducts of many substances, such as dilute gastric juices and so forth and this without an infection.

He also produced the disease with various bacterial cultures which he injected into the ducts. Brewer, in this connection, also points out the effect of the passage of large stones through the papilla, in relaxing the sphincter and permitting of infections from the duodenum. Robson, in his operative work, found twenty cases or more in which chronic pancreatitis resulted from partial obstructions or infections of the duct, interfering with free drainage. The pathologic condition present was a chronic interstitial pancreatitis with enlargement and hardening of the gland, much resembling malignant disease. This enlargement of the head of the pancreas compresses the common duct and causes jaundice.

It can be seen that a gallstone obstructing the papilla may cause bile to pass through the duct of Wirsung and in some cases out the duct of Santorini, resulting in pancreatitis, or the main pancreatic duct might be obstructed and yet the pancreas escape by reason of the accessory duct of Santorini. Considering the frequency of gallstones and infections of the liver ducts which must affect the pancreatic ducts more or less, biliary calculi occupy the most important position as

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to the causation of pancreatitis, and the form which the disease takes depends, to a large extent, on the amount of obstruction and the degree of infection or chemical irritation which takes place. In thirteen recently reported cases of acute pancreatitis operated on gallstones were found in ten. Pancreatitis also occurs independent of gallstone disease, through infections from the gastro-intestinal tract, as during the course of a duodenitis, gastric ulcer or cancer; and at times its origin is intrinsic, having no external evidences as to its causation.

Pancreatitis has been divided by Robson into acute, sub-acute and chronic. The knowledge of acute pancreatitis has been gained so largely from postmortem examination that we recognize only the more severe grades of the disease. The few surgical observations with recovery, and the accumulations of fluid of pancreatic origin due to traumatisms, occurring in the omental bursa, in connection with certain heretofore unexplainable complications found during operations on the biliary tract, lead to the belief that many cases of acute pancreatitis are not recognized because recovery has followed. It is altogether probable that this disease is not so fatal a malady as our limited knowledge of the subject would lead us to believe. The course of the acute form is so often marked by hemorrhage into and about the pancreas that the disease has been called acute hemorrhagic pancreatitis without regard to whether hemorrhage was a prominent factor or not, and in other cases fat necrosis was so important a feature that no reference was made to the pancreas at all.

Acute pancreatitis often follows injury as in one of Robson's cases, in which a servant fell against the corner of a table, striking the abdomen over the pancreas and in forty-eight hours was dead from this cause. The disease is ushered in by the most acute and sudden pain in the epigastric region, with profound collapse. The abdomen becomes at once distended and this, with the nausea or vomiting, may lead to the diagnosis of intestinal obstruction. Among the special symptoms noted are "nervous unrest" (Halsted and Opie), "repeated attacks of collapse" (Fowler), "lividity" (Evens), hiccough (our own case).

In the hemorrhagic form, death usually follows in a few hours or days. The indications at this time are to relieve the shock and sustain life. If the patient tide over these acute symptoms and a subacute pancreatitis is established, death may result later from infection, with formation of abscess, and it is in this condition that incision and drainage may aid recovery as in cases reported by Fowler and others. The drainage may be anterior through a tube protected by gauze packing, or a large posterior incision at the left costovertebral angle, as recommended by Robson. In the few successful cases reported the drainage was prolonged weeks or months.

Fat necrosis is the most interesting phenomenon connected with acute pancreatitis, and occurs in a large percentage of cases, and may co-exist with the hemorrhagic form or in some of the cases which end in recovery without hemorrhage or infection, as in the case which we reported.[1] The symptoms are those of an acute form of pancreatitis with repeated attacks of shock and collapse, probably as new foci are formed by fresh leakage from the pancreas. The fat necrosis is usually limited to the upper abdominal region and affects the omentum, mesentery and retroperitoneal fat by preference, although cases have been reported in which the epicardial fat has been involved and even the bone marrow. In Beck's case the peritoneum was attacked, having much the appearance of tuberculosis. The distribution of the areas involved is hard to explain. Is it due to intraperitoneal leakage with absorption through the lymphatics, or is it not possible that the development of the pancreas as an intraperitoneal organ and the fatty conversion of the posterior layer of the peritoneum may be the important factor in the diffusion of the irritant?

The appearance of fat necrosis is characteristic. Little areas of opaque spots scattered throughout the fat of a whitish or brownish hue, and from the size of a millet seed to that of a pea, or often very much larger. The pancreas itself may be so slightly affected that it has been overlooked upon examination. This is the most reasonable explanation of cases reported without mention of the pancreas. Why does injury or disease of the pancreas cause hemorrhage and fat necrosis? Robson's observation that there is a greater tendency to hemorrhage in cases of jaundice complicated with pancreatic disease, has been confirmed by the experience of others, and it is probable that disarrangement of its secretory function may have this effect. The action of the pancreatic secretion upon the fats is to split the fat globules into fatty acids and glycerin, and it has been thought that the absorption of the glycerin may so act. It would appear, however, that the amount of glycerin absorbed would be too small to account for the phenomenon. The fatty acids unite with the calcium salts, giving rise to the opaque spots which characterize the disease. As aids to diagnosis, glycosuria, fatty stools, lipuria and so forth, are of value, but are not often present, and therefore if not found have no negative weight. Mr. Cammidge, in a few cases, discovered a peculiar crystal in the urine which he has described (Robson). Opie found steapsin in the urine obtained after death in one case. Walker points out that the absence of pancreatic secretion from stool is shown by a pale color of the feces, much like that peculiar to cholemia. Most cases have at some time a rise of temperature and as a cholangitis is often the source of infection in acute pancreatitis, chills and fever with sweating may be expected in this class of cases. Opie, in 29 cases of chronic pancreatitis which came to necropsy at Johns Hopkins, found the three most common causes to be pancreatic calculi, gallstones in the terminal portion of the duct, and carcinoma, and notes its frequent appearance as a complication of cirrhosis of the liver. Glycosuria coming on late in the course of hepatic cirrhosis is suspicious of interstitial changes in the pancreas. In the diagnosis of the chronic forms of pancreatitis Thayer says that the feces should be searched for excess of fats and for fragments of the pancreas. Evidence of imperfect digestion of albuminoids, as shown by Sahli's glutoid capsule, he also believes to be of value.

In acute and subacute pancreatitis the surgical indications, beyond the opening and draining of septic accumulations in or about the pancreas, would be the removal of the gallstones, if present, and the establishment of free drainage through the gall-bladder, relieving the tension and aiding the secretions to escape. This alone resulted in the recovery of the case reported by Beck, and our case.

The most important diagnostic feature of chronic pancreatitis is jaundice and in this subjects the enlarged

1. JOUR. A. M. A., Jan. 12, 1902.

pancreas may be felt. Frequently a distended gall-bladder can be palpated, which is unusual in stone obstructing the common duct. The slow course aids in differentiating from malignant disease.

The treatment of chronic pancreatitis is by drainage, and this is best accomplished by way of the gall-bladder. We have had seven well-marked cases, four treated by cholecystostomy, three by cholecystenterostomy; twice the anastomosis was made to the transverse colon and once to the duodenum. All recovered and the ultimate result in the cases in which the transverse colon was used was as good as with the duodenum. It is sometimes difficult to make a satisfactory anastomosis between the gall-bladder and duodenum in these cases, on account of adhesions. Cholecystostomy is preferred by Robson, but the prolonged external discharge is a cause of much annoyance to the patients.

DISCUSSION.

Dr. John C. Munro, Boston—For the early and accurate diagnosis of an acute pancreatitis some simple laboratory test is most desirable, but so far none has been discovered and it is doubtful in my mind if any test better than the clinical will be of use any more than is the case in diagnosticating an appendicitis. The onset and course of a goodly proportion of cases of acute pancreatitis is so rapid and alarming that for the present we must depend on our clinical observation, and it is with this in view that I offer the result of my own experience, trusting that by the accumulation of such experiences we may sooner or later acquire a sufficiently accurate knowledge of the various symptoms and their importance to enable us to make an early diagnosis.

For the benefit of the general practitioner who sees the cases at the beginning of the attack, and for the benefit of the surgeon who frequently must operate without delay if operation is to be of benefit, we must have some means of making a fairly accurate, rapid diagnosis, without being obliged to await the results of a complicated and tedious laboratory investigation.

That acute pancreatitis is more common than the books teach I have no question. A certain proportion recover spontaneously, and I believe the proportion is larger than we suspect. In such cases operation probably does neither harm nor good. But there is a type with extensive, rapidly forming necrosis for which operation offers the best means of relief, but to accurately distinguish between the two types is probably as impossible at present as it is impossible to always predetermine a mild from a fulminating case of appendicitis.

Altogether I have seen nine cases of undoubted acute pancreatitis where the diagnosis was verified by operation or autopsy or both. In addition, I have seen a number of cases, typical as to symptoms, of strongly suspected pancreatitis, but without operative or pathologic verification. No cases of the latter group are included in this analysis, nor are those met during operations for gallstones, etc.

Of the nine cases included here I saw three in consultation with Dr. Paul Thorndike, who operated on all and saved two. One of these was supposed to be a tubercular peritonitis and the abdomen was closed; the other had a hard swollen pancreas without necrotic softening, and recovered after a temporary drain. His third case had extensive necrosis and died in spite of drainage.

A fourth case I saw with Dr. F. B. Lund, of extensive necrosis, and with improvement for several weeks. This case and three of my own have been reported in full by Dr. Lund in the *Boston City Hospital Med. and Surg. Reports*. Of my own cases, five in all, two with extensive necrosis recovered; one died on the table; one died in a few hours, and the fifth in a few days, following operation. I will briefly analyze the history and symptoms in these cases.

Six had had one or more attacks preceding the present one, described by the patients as exact counterparts, but less severe. Another patient had been operated on for some pelvic trouble two years before, but the abdominal symptoms had persisted ever since the operation. This patient recovered after an exploratory laparotomy, and one is tempted to suspect that she had suffered from a chronic pancreatitis with occasional subacute exacerbations. One of my own recoveries had had distinctly no preceding attacks, and from the case that died on the table no early history had been obtained. Vomiting and pain, often sudden and severe, or a severe outburst in a more or less extended period of mild pain was practically present in all cases. Occasionally there was a chill, but not always, and not necessarily in the severest cases. In only three cases could a tumor be felt, once in the left renal and hypochondriac region, and twice to the right of the umbilicus. But considering that every patient, with the exception of one only, was markedly fat, and that in all but one there was more or less distension, it is not to be wondered at that a tumor, if present, could be overlooked. The large majority looked ill, not necessarily peritonitic, and on the evidence of the facies, mainly, was operation performed in one or two instances. Abdominal spasm was practically always present, but less marked than in the ordinary case of infected peritonitis, with other signs of equal gravity. Under anesthesia spasm, as a rule, persisted only in the upper portion of the abdomen. Associated with spasm was tenderness, general, or general with increase in the upper abdomen or loin. Location of pain had practically no significance. The pulse ranged from 100 to 140, and the temperature from 99 degrees to 104 degrees in different cases. Elevation of the pulse seemed to be of more importance than elevation of the temperature. In only one case was sugar noted definitely. In some, careful repeated urinalyses proved negative. In the remainder it was not observed in the ordinary routine examinations.

Leucocyte counts were not of value. So far as could be told at operation in recovery cases, and in fatal cases without autopsy, gallstones were absent in 7, but in two of these there was slight jaundice. Jaundice was present in the two in whom gallstones were found, and it is possible that slight degrees of icterus were overlooked in others. Obstipation was of less significance than one would expect, and when supposedly present it yielded to a high cathartic enema.

In conclusion, I would offer the following suggestions as diagnostic aids:

1. A history of preceding attacks.
2. Vomiting with sudden acute abdominal pain in fat patients.
3. Abdominal distension with moderate spasm.
4. Tenderness in upper abdomen.
5. The facies, not peritonitic.
6. Slight or fleeting jaundice.
7. Previous history of gallstones.

Dr. Henry O. Marcy, Boston—In reference to the statement that operative interference is comparatively rare, I would like to offer one case that has not been published. The patient was a strong man, in middle life, who entered the hospital for biliary obstruction, deeply jaundiced and in extreme suffering. He showed evidence of a double tumor, one over the gall-bladder, and one to the left of the middle line. It was believed that the man had some malignant trouble, but he demanded exploratory operation without further delay. On opening the gall-bladder, which contained 12 ounces of fluid, an extraordinary accumulation of gallstones was discovered, numbering nearly one thousand and weighing about four ounces. The second tumor was accounted for by a very large pancreas, which later soon returned to its normal condition. This was evidently consequent on obstruction of the pancreatic duct from presence of the gall-bladder tumor. Rapid recovery ensued and the patient remains well at the end of three years.

Dr. Emmet Rixford, San Francisco—It has been my misfortune to have had three cases of extensive fat necrosis following chronic pancreatitis due to gallstones, the condition being made out in each case at operation. Two were in very fat women and the third in an equally fat man. In one case the mass of necrotic fat was as large as a man's fist, making a hard tumor which could be felt through the abdominal wall.

Two cases died of sepsis, one on the fifth day, the other after subsequent intestinal obstruction and gastro-enterostomy. In a third case I opened the abdomen for intestinal obstruction and peritonitis in a man of 50 years who gave a definite history of multiple attacks of gallstone colic. The small intestine was found to be gangrenous for a distance of twelve inches or more and it was evident that the mesenteric vessels were obstructed. Resection of the necrotic gut was performed, but the patient was too weak to permit of anastomosis, so the ends were simply brought outside. The patient lived five days, dying of exhaustion. Autopsy showed that there was no peritonitis but that the fat necrosis had so extended as to completely surround a large radicle of the portal vein and encroach on its lumen. A small clot formed at the point of constriction caused complete obstruction. This case shows very well how destructive are the substances which cause fat necrosis in these cases. in all three cases there were present gallstones in the gall-bladder and in two of them in the common duct. Most of the stones were small, perhaps the size of a pea, suggestive of what Opie has said as to the size of gallstones which theoretically should be the cause of pancreatitis. In all three cases there was definite pancreatitis of chronic character. In another case which has but a negative connection with this subject there was complete obstruction to the flow of bile for four months, due to a small carcinoma of the diverticulum of Vater. I was able to remove the tumor, relieving the obstruction and to replant the duct into the duodenum. It was interesting to note that the duct from the pancreas entered the duodenum by an independent opening about three-quarters of an inch from the papilla. There was, therefore, no opportunity for the bile to enter the pancreas. There was no fat necrosis and where exposed the pancreas was sound. The patient lived a year, succumbing finally to recurrence of the carcinoma.

DR. W. A. BATCHELOR, Milwaukee—Eight months ago I had a case of acute pancreatitis in a man about thirty-seven years of age. He was taken ill suddenly with epigastric pain, nausea and vomiting and the case was at first thought to be one of intestinal obstruction. There was a little fever and rapid pulse. About nine days afterward symptoms of collapse occurred with a recurrence of the severe epigastric pain, which pointed, evidently, to a second attack of hemorrhage. Not until that time was the diagnosis made. The discovery in the epigastrium of a tumor mass, palpable and almost perceptible, had much to do with making the diagnosis. The case was operated on two days later by a median incision, and the omentum opened between the stomach and the colon. The tumor mass was in the region of the pancreas. It was opened and six or eight ounces of blood clot and necrotic gland tissue washed out and the cavity drained. The drainage was continued for several weeks. In these cases minute particles of fat necrosis are noticed as soon as the abdomen is opened. The case was interesting on account of its rarity; and I have listened to Dr. Mayo's with great interest. It seemed to me in thinking over this case that it contained some things which should help us in our diagnosis, which is so often made postmortem; and in the consideration of these cases the diagnosis is one of the most important points—and rarely easy.

DR. GEORGE W. CRILE, Cleveland, Ohio—I would like to report one case—a female, 23 years of age, who had had one previous attack. Her temperature ranged from 100 to 103, her pulse from 130 to 160, with acute pain all over the abdomen. The case seemed to be one of obstruction, the vomiting continuing a number of days. The patient was watched for ten days, during which time operation was delayed. The bowels finally moved; diagnosis was not made. The patient subsequently died and autopsy showed pancreatitis.

DR. WILLIAM L. ESTES, South Bethlehem, Pa.—There is one point not mentioned in Dr. Mayo's excellent paper which I think is important, and which was first brought to the attention of the profession by Mayo Robson. It is a fact that the gross physical characters of the gland in some cases of chronic pancreatitis very closely resemble carcinoma. I have had several cases of chronic pancreatitis; the physical signs in one of them were those of carcinoma. In this case I cut down on a very large gall-bladder, but absolutely no obstruction in the ducts was found. The head of the pancreas was very large; in fact, so large and hard that I thought it was a case of carcinoma. I gave a very bad prognosis. In order to relieve the condition of jaundice, however, I drained the gall-bladder. To my astonishment, the man made an absolute recovery. I have had several other cases, but only wish to add this one to the paper just read in order to call the attention of the Section again to this deceptive condition.

DR. F. T. STEWART, Philadelphia—I would like to mention a case of acute pancreatitis on which I operated and in which there was a protracted history of gastric disturbance, with violent outbreaks of vomiting. The patient was a woman, aged about forty years and very fat, who had suffered two days' illness, indicating acute intestinal obstruction, high up, before I saw her. The urine contained neither albumin nor sugar. An incision was made above the umbilicus and a fat necrosis immediately encountered. At first this was thought to be a peritoneal carcinomatosis. The pancreas was very much swollen, and infiltrated with spots of hemorrhage. The patient died soon after the operation and postmortem showed fat necrosis in the peritoneum, in the mesentery and in the perirenal fat. There was a stone in the pancreatic duct, but none in the gall-bladder. This case gave the usual history of many of these cases, the real diagnosis being made postmortem.

DR. MAYO, in closing—Dr. Estes brings up a very important point which the limited time did not allow me to discuss. Acute pancreatitis must be very much more common than we have supposed, and it is not necessarily so fatal a malady as we have believed it to be.

OBSTRUCTION OF THE BOWELS FROM MECKEL'S DIVERTICULUM.*

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Notwithstanding the fact that modern surgery has brought the mortality rate from obstruction of the bowels down from 95 to 60 per cent., it continues to be one of the most desperate conditions the surgeon is called on to treat, and every experience and observation which will help us to reduce this mortality still lower should be welcome.

This subject has been so well written up by Fitz,[1] Kammerer,[2] and Halsted,[3] that it is necessary to dwell but very briefly on the history and pathologic anatomy as an introduction to the report of my three cases.

Meckel's diverticulum is a diverticulum of the ileum and is a portion of the unobliterated omphalo-mesenteric canal of fetal life. Although it bears Meckel's name, it was first described by Ruysch in 1701, while Meckel's article did not appear until 1809. From the fourth to the sixth week of fetal life the abdominal plates close, cutting off the vitelline or omphalo-mesenteric duct, which is the communication between the umbilical vesicle and the primitive intestinal canal. This diverticulum may be found on the ilium anywhere from one to four feet from the ileocecal valve. It is usually less than four inches long, but has been reported ten inches in length. It is usually cone-shaped, with its lumen somewhat less than that of the bowel, but it varies greatly in size and shape.

Fitz believes that duplication of the intestinal tract is due to the remains of the vitelline duct. He also

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

1. American Journal of the Medical Sciences, July, 1884.
2. Annals of Surgery, 1897.
3. Annals of Surgery, April, 1902.

suggests that an esophageal duplication or diverticulum may be due to fetal remains. Any portion of the omphalo-mesenteric duct may be cut off, causing a cyst. These cysts may be in the abdominal wall or within the abdomen. The omphalo-mesenteric duct sometimes remains open, discharging feces at the umbilicus as in Case 1 of this paper. Some remains of the omphalo-mesenteric duct is found in about 2 per cent. of all bodies examined. In 3400 examinations made at St. Bartholomew's Hospital a Meckel's diverticulum was found twenty-seven times or about one in every one hundred and twenty-six bodies. Mitchel's observations in a very large number of bodies teaches us that a diverticulum is of much more frequent occurrence than formerly believed.[4]

A Meckel's diverticulum has frequently been mistaken for a vermiform appendix and an inflammation caused by a diverticulum has been pronounced appendicitis, as in Case 3 in this paper. A verdict for one thousand dollars was recently given by a jury in one of our western states against a surgeon who admitted that he had removed a Meckel's diverticulum instead of an appendix.

A short diverticulum with a free end is not very likely to cause obstruction, but the point is very commonly attached, which makes a band stretched across the abdominal cavity which may cause obstructions in a number of different ways. This attachment may be to the abdominal wall at or near the umbilicus, to the mesentery, to the small intestine and to various other points within the abdomen. The most complete form of Meckel's diverticulum is that in which the omphalo-mesenteric duct is still attached to the umbilicus and patulous throughout. The round cord frequently passing from the apex of a diverticulum to the umbilicus may be either the remains of the vitelline duct or the omphalo-mesenteric bloody vessels or both. It is now generally believed that inflammatory adhesions of the apex of a diverticulum to surrounding parts is a rare occurrence. The most frequent variety of obstruction is where this cord and the diverticulum form a loop through which the intestines pass as in Case 2 in this paper. That part of the ileum between the diverticulum and the cecum is the part usually obstructed.

The symptoms of obstruction from a diverticulum are those of obstruction from any cause, but occasionally they are of such a character as to make an accurate diagnosis possible. The suggestion that the possession of a harelip, clubfoot or other congenital deformity by a patient suffering from obstruction of the bowels would point to a diverticulum as the probable cause of the obstruction is not a practical one and might even be misleading. Localized meteorism in the right inguinal region in a young male patient, as in Case 2 in this paper, is strong presumptive evidence of obstruction from a diverticulum.

The treatment of intestinal obstruction from Meckel's diverticulum does not differ from that of obstruction from any cause, for the only rational treatment in all cases is early operation, but a positive diagnosis would aid the surgeon in securing an early operation and would help him to locate his incision properly. Fitz concludes that in operation for acute intestinal obstruction not due to intussusception and without local symptoms the incision should be made in the right lower quadrant. The main points in the operation are to relieve the obstruction as early and as quickly as possible, and when the conditions of the patient will permit, to remove the diverticulum. Under these conditions the prognosis is remarkably good, but when operation is delayed it is necessarily bad.

4. Journal of Anatomy, vol. xxxii.

Case 1.—Baby F., aged 7 months, was brought to my office on Jan. 23, 1896, suffering from symptoms of obstruction. The child was very frail, weighing only twelve pounds. It had been born at seven months and is said to have weighed only two pounds when born. Its umbilicus had always been moist and rather prominent. A few days before I saw this child it had been attacked with a severe cough and the umbilical protuberance had gradually enlarged. Upon examination a hernia about as large as the first two phalanges of my index finger presented. The surface was raw and congested and the child was very weak, constantly crying and straining. A probe could be passed through the apex of the hernia into the abdominal cavity. The child was taken to my office operating room and prepared for operation in the usual manner. At first we feared to give an anesthetic because the little one was so very frail, but we soon found that it would be impossible to control the intestines without it, so chloroform was administered. An incision was made through the abdominal wall just below the umbilicus and the hernia found to contain a Meckel's diverticulum with an opening in its apex. The diverticulum projected at a right angle from the small intestine and was about two and one-half inches long. The child was in collapse so that removal of the diverticulum could not be considered. The opening into the apex was closed by Lembert sutures of silk, the bowel reduced and the abdominal wound closed with silk sutures. The child was carried home in its mother's arms on a street car. Dr. Cutts attended it afterwards and it made an uninterrupted recovery. One year later it was reported to be thriving and in good health.

Case 2.—On Aug. 26, 1901, I was called to see J. A. C., a well-developed healthy boy of four years. His bowels had always been very regular, moving usually twice a day, but for the two days preceding his present illness he had been constipated. On August 25, the day before I saw him, the mother administered a cathartic which was followed by two movements of the bowels. In the afternoon of the same day the boy began to have severe cramps in the bowels. The pain began about the umbilicus and radiated in all directions. More cathartics and an enema were given with very little result. He suffered all night and in the morning Dr. Gould was called and made a diagnosis of intestinal obstruction and advised that a surgeon be sent for at once. Upon examination we found the abdomen somewhat distended, tenderness everywhere, temperature normal and pulse 150. He was constantly crying out with pain and making frequent efforts to vomit. He was taken to the Northwestern Hospital as soon as possible and taken directly to the operating room, where chloroform was administered. As soon as he became unconscious a tumor could be felt in the right lower quadrant. It could be moved about quite freely and was tympanitic, evidently being composed of distended bowel. I then made a diagnosis of obstruction by a Meckel's diverticulum, and made an incision through the right rectus muscle. Very dark distended bowel came at once into view and abundance of serum escaped. On introducing a hand a tense band attached to the bowel close to its mesentery could be felt constricting the bowel. This band was clamped and cut when the bowel began at once to improve in appearance. The band proved to be the remains of the omphalo-mesenteric vessels extending from the tip of a Meckel's diverticulum to the mesentery. The diverticulum and band had made a loop through which about ten inches of the gut immediately above had passed. Below the point where the band was attached to the mesentery the gut was collapsed. The diverticulum was cone-shaped and about three inches in length. It was very dark colored, but very soon improved in color after the obstruction was relieved. The band was ligated and cut away at both ends. The patient was in collapse and removal of the diverticulum was out of the question. The abdomen was quickly closed and the patient given the usual treatment for shock. He rallied promptly and made a speedy recovery. The stitches were removed on

the eighth day and on the tenth day he was taken home where Dr. Gould kept him in bed a few days longer. The boy has been in good health ever since. I am satisfied that an attempt to remove the diverticulum would have resulted in death.

CASE 3.—This patient was operated on by my colleague, Dr. A. W. Abbott, to whom I am indebted for memoranda of the case and permission to report it. I was present during part of the operation. The patient, C. R., male, aged 19, was first attacked with severe pain in the region of the appendix about eighteen months before the present illness. It came on suddenly after pitching a load of hay. He was sick in bed two weeks after this with fever. He had never been well since the first attack. He had suffered from very obstinate constipation, distension of the bowels, loss of appetite and gradual loss of flesh and strength. About Jan. 23, 1902, he began to suffer from pain, fever and complete loss of appetite. After two weeks suffering he was brought to the city and placed under Dr. Abbott's care. At this time the patient was weak and emaciated and bowels would not move; pulse 100, temperature 99. A tender solid mass about two inches in both diameters, dull on percussion and slightly movable, could be felt at the right of the navel. A diagnosis of appendicitis with adhesions causing intestinal obstruction was made for which Dr. Abbott operated on Feb. 8, 1902.

An incision was made through the right rectus muscle directly over the mass. Two loops of intestine were adherent to the abdominal wall close to the umbilicus and a Meckel's diverticulum passing between them was adherent at the umbilicus. One feature of this operation was very interesting to me as a spectator and to a less experienced operator than Dr. Abbott might have been very embarrassing, indeed. Before the diverticulum was recognized and while separating adhesions from the abdominal wall the open end of a bowel suddenly appeared in the wound. This was the open end of the diverticulum, but it looked as if the bowel had been torn across and the other end left to empty its contents into the abdominal cavity. The diverticulum was cut off near the bowel and the opening closed in the usual manner. The loops of intestine were freed from the abdominal wall and dropped back. The vermiform appendix, which was the seat of a mild chronic inflammation, was removed. The patient, with the exception of a mild ether pneumonia, made an uneventful recovery and was restored to health.

DISCUSSION.

DR. W. J. MEANS, Columbus—My experience with this class of cases has been limited, owing probably to a failure to recognize the true condition. I have never recognized an obstruction from Meckel's diverticulum. I had two cases of cysts of the diverticulum that were very interesting, but these are scarcely apropos to the paper. I have seen obstruction of the bowels, especially in children, the cause of which was hard to explain. After listening to Dr. Moore's paper it occurs to me that possibly some of them might have been due to the diverticulum. The profession is certainly under many obligations to Dr. Moore for presenting a paper of this kind. Every surgeon that does abdominal work will more fully recognize the importance of having in mind the possibility of an obstruction of the bowels due to an attenuated diverticulum. While an obstruction from such a cause must occur infrequently, yet the cases presented in this paper and those that have been recorded by others, are sufficient in number to demonstrate that we do occasionally meet them. There is one important point, however, that must be remembered. There are no diagnostic signs peculiar to obstruction from the diverticulum that enables the surgeon to differentiate it from obstruction due to other causes. The importance, it seems to me, in recognizing this form of obstruction, depends largely on the fact that the diverticulum is a hollow tube, and should be ligated before section the same as an appendix. Adhesive bands can often be torn asunder without ligature. The subject is yet in the stage of evolution and will, no doubt, receive closer attention from abdominal surgeons in the future. We can anticipate, therefore, more exact data on the diverticulum as a factor in the causation of obstruction of the bowels.

DR. M. B. TINKER, Baltimore—We have had three cases of Meckel's diverticulum which have been operated on in the past two years at the Johns Hopkins Hospital, and I should think Dr. Moore's estimate of the condition occurring in 2 per cent. of the cases is perhaps not far from right. In one of our cases the diverticulum did not give rise to obstruction. The patient came in with symptoms of strangulated hernia and at the operation a small diverticulum was found in the hernial sac which was, no doubt, giving rise to the obstructive symptoms. It was at first thought to be the appendix after excision, but it was recognized that we were dealing with the small bowel as, of course, the diverticulum is always on the small bowel. After a short search the appendix was found and although perfectly normal was removed. I mention the case as one of interest in that one might mistake a diverticulum for an appendix. This form of hernia is not so very uncommon and it has been mentioned in literature two or three times within the past year. We have had two cases of obstruction of the bowel from Meckel's diverticulum, one of them coming in on the twelfth day from a place far distant in the South. This patient died, but one treated in the same way as Dr. Moore's, in which the obstructed symptoms were urgent, recovered.

DR. J. C. MUNRO, Boston—I recall at least four cases in adults, and I think that the diagnosis can be made in a certain proportion of cases. The patient may give a preliminary history of attacks of obstruction coming on suddenly and leaving as suddenly, which distinguishes them from appendicitis or obstruction due to inflammatory causes. In two of my cases the diverticulum was on the left and not on the right side, so that we operated in the median line. In one case, an infant 12 hours old, brought to the hospital, I found a double intussusception herniated through an open Meckel's diverticulum, requiring excision and anastomosis. The case lived only a few days.

DR. L. L. MCARTHUR, Chicago—These congenital anomalies may make their manifestations in one of two ways: mechanically or inflammatorily. I have had a case illustrating each variety. In one case the differential diagnosis seemed to rest between intestinal obstruction and appendicitis. I was requested to operate. I made a median incision close to the right of the umbilicus because convinced there was obstruction by band, the symptoms, in my opinion, being more that of a gradual intestinal obstruction than those of an inflammatory trouble in the appendix. Dr. Billings' diagnosis was acute appendicitis. On introducing my finger a band was immediately found. Following it downwards from the inner aspect of the umbilicus it was found to pass over the appendix, cutting the wall of the appendix by pressure gangrene and causing leakage. It was not appendicitis *per se*. In another case in the practice of Dr. Meacher the symptoms resembled appendicitis. He opened the abdomen in the region of greatest tenderness; a perforation was found of a prolongation from the small intestine of very large caliber tapering down to that of an appendix. This proved to be a diverticulum that had perforated from a mass of fecal matter producing pressure ulceration.

DR. D. W. GRAHAM, Chicago—The pictures do not convey quite the idea that the title of the paper intends. One of them looks like a hernia of the diverticulum. The interesting thing is not the hernial protrusion of the diverticulum, but that it is a factor in simple obstruction. Something like the last picture shows a permanent attachment of the diverticulum. In these cases the obstruction is purely mechanical and the same condition is brought about where we have a band running from the aorta to the umbilicus. The liability to simple mechanical obstruction is always present where there is a band attached to the umbilicus. In these cases the obstruction is purely mechanical. Why attempt a differential diagnosis? I think this is wholly impracticable and unnecessary. The practical point is, have we mechanical obstruction or have we not? A short time ago a case that had recently gotten over an acute attack of appendicitis still complained of some troublesome symptoms and I opened the abdomen. I found a small pus sac of fecal matter which communicated on one side, and on the other side the distal end was open. I merely mention this as an incident not closely related to this subject.

Dr. W. T. Eckley, Chicago—There is now in the Pathologic Exhibit a case of Meckel's diverticulum reduced to a very small thread, which might easily be mistaken for a peritoneal adhesion in a surgical operation. This diverticulum is found in a case of sympus apus reported by Dr. McDermid of Chicago. The specimen, as is common in such cases, has absence of anus and external genitals. The uterus is bicornute and no bladder is present. The urinary apparatus consists of a mesonephros opening into a cloaca. The child was born at term and lived a few hours. Whether cases of sympus apus as a rule present abnormal development of the products of the Wolffian body and Müller's duct and show Meckel's diverticulum, I am unable to say. Notwithstanding the very small size of the diverticulum in this specimen, it is hollow and admits the passage of a bristle.

Dr. Moore, in closing—The suggestion made by Dr. Munro that the condition is originally a mechanical rather than a septic one is interesting, but we should remember that it becomes septic later. Dr. McArthur's case is like Dr. Treves'. I wish to defend my artist against Dr. Graham's criticism of the picture, which he says illustrates rather a hernia than an obstruction. You may be sure there is an obstruction where you see such a condition as this picture shows. He further says that the diagnosis need not be made. This is an unscientific position. Dr. Eckley's remark concerning the hollow band attached to the diverticulum simply calls for the suggestion that I made that it is advisable always to ligate and cut between ligatures because you may have an open diverticulum or a blood vessel that may bleed profusely.

Dr. Graham—I did not say we should not make the diagnosis. I simply stated we need not attempt to make a diagnosis between the kinds of obstruction.

ANATOMY FOR THE PRACTITIONER.*

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The post-graduate study of gross anatomy, normal and pathologic, is for the practitioner a subject of great importance. There is a strong necessity for a continued review of these fundamental subjects, in order that clinical procedure may rest on a scientific basis. A mere book review, however, on which the great majority of practitioners are obliged to depend, is very inadequate. How then shall the practitioner review his knowledge of practical anatomy? The ideal method is, doubtless, for the practitioner to attend from time to time the post-graduate courses in normal and pathologic anatomy offered in the leading medical schools. Here he will find an abundance of material, well-equipped laboratories and valuable assistance from the instructors. Only a small percentage of the practitioners, however, are fortunate enough to be able to take advantage of these facilities. For numerous reasons such courses are inaccessible to the great majority. It is the purpose of the present paper, however, to call attention to numerous opportunities for the home study of practical anatomy which are open to every practitioner who is willing to devote a little time to the subject.

LAWS GOVERNING DISSECTION BY PHYSICIANS.

In considering this matter two important questions arise: 1. How and where can material be obtained for the study of human anatomy? 2. What methods can be used in preserving and studying the material? In regard to the first question, the most desirable material is, of course, the human cadaver. In order to learn under what conditions physicians are legally entitled to human cadavers for dissection, I have mailed a copy of the following inquiry to each secretary of state, or the secretary of the state medical association of every state and territory in the union:

Dear Sir:—In order to make a report to the American Medical Association, I wish to know whether, in your state, medical practitioners outside of medical schools are entitled to human cadavers for dissection; and if so, under what conditions. If you are unable to give me the desired information, please refer this inquiry to some one who can, and greatly oblige, yours respectfully, C. M. Jackson.

Replies have been received from all the states except South Dakota and South Carolina. From these replies it appears that in regard to their anatomic laws,

Fig. 1.—Full-term human fetus, hardened and sectioned by the formalin method. The photograph shows how perfectly the original form of the body may be restored by piling up the sections in their proper order.

the states and territories may be divided into three classes, nearly equal in size: 1. Those in which there is no statute whatever relating to the subject. This class includes Alabama, Arkansas, Arizona, Delaware, Florida, Idaho, Indian Territory, Montana, Mississippi, North Carolina, New Mexico, Oklahoma, Rhode Island, Texas, Utah, Washington, and Wyoming. 2. Those in which dissection is legalized but only medical schools are entitled to cadavers. This class includes Connecticut, Colorado, District of Columbia, Georgia, Indiana, Kansas, Kentucky, Louisiana, Minnesota, Michigan, New York, Ohio, Pennsylvania, West Virginia. 3.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Those in which, under certain conditions, practitioners as well as medical schools are entitled to cadavers for dissection. This class includes California, Iowa, Illinois, Maine, Maryland, Missouri, Massachusetts, Nebraska, New Jersey, New Hampshire, North Dakota, Oregon, Tennessee, Vermont, Virginia, Wisconsin.

The restrictions under which practitioners may obtain cadavers vary somewhat in the different states. A bond is usually required to guarantee the use of cadavers for scientific purposes only. Most states specify that the needs of the medical colleges shall be met before cadavers are available for practitioners. No one, I presume would question the justice of this rule, since dissection is absolutely necessary in the medical schools. But the point to be emphasized is this: *The medical profession in every state should demand a law appropriating for anatomic uses all bodies to be buried at public expense.* This law, properly enforced, would secure an abundance of material for practitioners as well as for medical schools. The difficulty usually lies in the vigilance necessary to secure an enforcement of the law. It should be the duty of the physicians in each locality to see that the law is enforced, in order that sufficient material for all who desire it may be provided. An excellent provision in the New Jersey law requires physicians who wish to dissect to organize themselves into an anatomic and pathologic association (of three or more) for the advancement of medical and surgical science. The Wisconsin law provides that such work may be done under the auspices of the county medical societies, an idea which I shall discuss later.

USE OF FETUSES.

But are there no opportunities for practitioners who for any reason are unable to procure cadavers? There are many. First, let me call your attention to the neglected opportunities in the way of fetal specimens. Advanced fetuses are fairly abundant, easily preserved, and valuable for anatomic study. A full term fetus in many respects makes an excellent substitute for an adult cadaver. A careful study of such material is also of great value in demonstration of the anatomic peculiarities incident to infancy and childhood, a subject of especial interest to those concerned with diseases of children.

In passing, let me say that fetal specimens, especially the earlier stages, would be very thankfully received at almost any anatomic laboratory, in case the physician did not wish to keep them. Methods of preservation are given below.

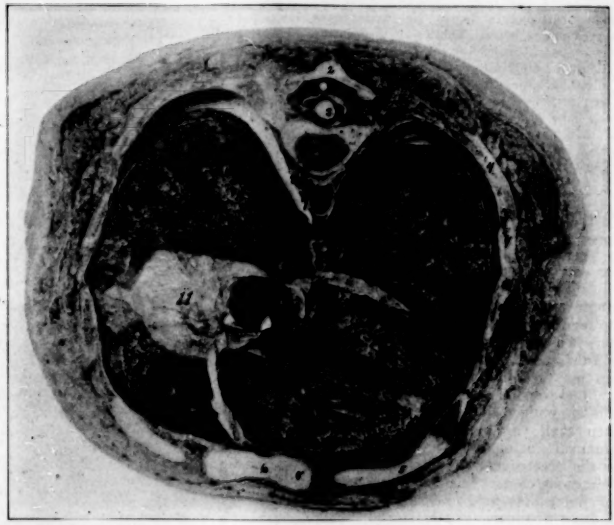

Fig. 2.—Cross section through the lower thoracic region of a full-term human fetus. Formalin method, decalcification and freezing. Section viewed from above. Note the relatively large size of the heart. 1, Vertebral centrum; 2, neural arch; 3, spinal cord and meninges; 4, ribs cut across; 5, costal cartilages; 6, sternum; 7, thoracic aorta; 8, vena azygos, major and minor; 9, esophagus; 10, lungs; 11, dome of diaphragm; 12, right auricle; 13, entrance of inferior vena cava; 14, right ventricle; 15, left ventricle; 16, pleuro-pericardial septum.

Another source from which much valuable material may be derived for the study of normal and pathologic anatomy, especially of individual organs, is from specimens obtained at operations and postmortems. A little zeal combined with tact can accomplish a great deal in this line. Think of the amount of material which might be used for anatomic study, but which is thrown away and absolutely wasted. This state of affairs, I believe, is due largely to the fact that few practitioners know how to preserve properly and to make use of such material.

The remainder of this paper will, therefore, be devoted to the explanation of a few simple methods, which may, perhaps, be of some practical value. Of these, three will be given: 1, To preserve a cadaver for or-

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dinary dissection; 2, to cut a body into sections for topographic study; 3, to preserve individual organs with their natural colors (Kaiserling's method).

PRESERVATION OF CADAVERS.

To prepare a cadaver for ordinary dissection, it should be embalmed by the arterial injection of some fluid which will preserve the body indefinitely, and yet retain as nearly as possible the natural consistency and color of the various organs. Many fluids are in use for this purpose, the best of which, in my experience, is the alcohol-carbolic acid-glycerin mixture. It is made by mixing together equal parts of strong alcohol (95 per cent.), melted carbolic acid crystals and glycerin. The method of embalming is very simple. Cut down to an artery (common femoral preferred), and inject the fluid with any available injection apparatus. I have seen an ordinary rubber-bulb hand syringe used with perfect success. The main point is to keep up a strong pressure until the fluid has penetrated through the arteries to all parts of the body. It will require about an hour of time, and six to eight quarts of the fluid. After twenty-four hours, when the arterial pressure has gone down, a colored mass may be similarly injected. Equal parts of plaster of paris and starch, ground up with red lead, sifted carefully, and mixed with water to a thin paste makes a very satisfactory injection mass. Watch the cadaver closely for several days after embalming. If any part shows signs of decay (due to imperfect injection), give it local hypodermic injections of formalin (25 per cent.). After having been embalmed perfectly the cadaver will keep indefinitely. Drying is to be prevented by wrapping in waterproof cloths, or placing in an air-tight box or can. The great advantage of an embalmed subject is that you can dissect at your leisure, a point of no small importance to the practitioner.

MAKING SECTIONS.

The second method, that of sectioning a body for topographic study, was given by me in a paper before this Association last year. The details of the method were published in THE JOURNAL Sept. 21, 1901, and need not be repeated here. Briefly, the method consists in the arterial injection of 50 per cent. formalin, which hardens the body so thoroughly that it can readily be cut, with a long knife and saw, into sections for study. By decalcifying in 5 per cent. hydrochloric acid for several weeks after hardening, even the saw may be dispensed with. The accompanying specimens show what can be accomplished by this method. Like the first method, it can be applied to advanced fetuses, in which case it is advisable to freeze the body (with salt and ice mixture) before cutting into sections. Figures 1, 2 and 3 are from specimens prepared in this way. The immense practical value to be derived from a study of the body sectioned in this manner needs no emphasis.

Fig. 3.—Cross section through the upper abdominal region of a full-term human fetus. Formalin method, decalcification and freezing. Section viewed from above. Observe the enormous liver, occupying more than one-half of the entire section, and reaching almost to the spleen; the tubular stomach, in the triangle formed by liver, pancreas and spleen, and especially the relatively large suprarenal bodies, which at first glance might readily be mistaken for the kidneys. 1, intervertebral disc; 2, neural arch; 3, spinal cord; 4, spinal meninges; 5, ribs; 6, costal cartilages; 7, diaphragm; 8, aorta; 9, suprarenal bodies; 10, liver; 11, spleen; 12, pancreas; 13, stomach; 14, lesser omentum; 15, great omentum; 16, peritoneal cavity; 17, falciform ligament.

PRESERVATION OF INDIVIDUAL ORGANS IN COLORS.

The third method applies chiefly to individual organs or parts. The cheapest liquid in which to preserve such specimens is 5 per cent. formalin (2 per cent. formaldehyd), which costs only ten or fifteen cents per

gallon. The following (Kaiserling's) method is more expensive and more tedious, but has the great advantage of preserving the natural colors of the various organs, both in normal and pathologic conditions.

Two separate fluids are required:

A.—FIXING AND HARDENING FLUID.

Formalin, (40 per cent. formaldehyd)	½ pint.
Distilled water	2½ pints.
Potassium nitrate (saltpeter)	2/3 ounce.
Potassium acetate	1¼ ounces.

B.—PRESERVING FLUID.

Potassium acetate	8 ounces.
Glycerin	1 pint.
Distilled water	5 pints.

The above amounts are sufficient for an organ of the size of the human liver.

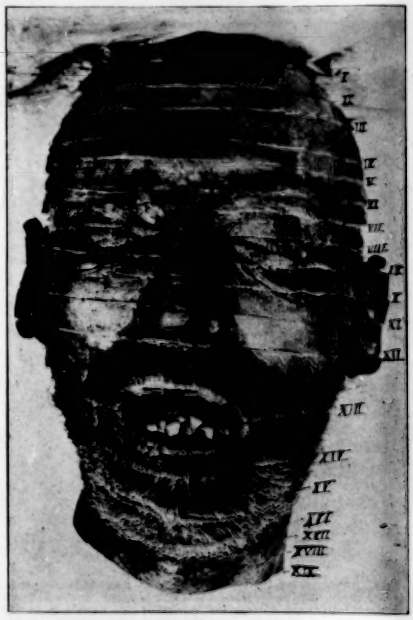

Fig. 4.—Cross sections of head and neck of an adult. Formalin method. By this means the surface form and mutual relations of all the internal structures are made accessible for study.

The procedure is as follows: After removing the fresh organs, place them in a vessel on cotton, cover well with solution A and place in the dark for four to eight days, according to the size of the specimen. Liquid should be changed once after twenty-four hours. When thoroughly fixed and hardened, the specimen, after draining a few minutes, should be placed in 95 per cent. alcohol for a few hours (not over six hours), which restores the natural color. The specimen is then placed in a glass vessel containing solution B, which preserves it indefinitely. Specimens when not in use should be kept in a dark place, otherwise the colors are liable to fade out in time. Specimens preserved by this method may be dissected later, if desired.

MUSEUMS FOR SOCIETIES.

In conclusion, let me emphasize a point previously referred to. Why could not each local or county medical society establish an anatomic museum; not the old-fashioned curiosity museum, but a practical laboratory for working purposes, where specimens could be preserved and used to illustrate the normal and pathologic anatomy of all parts of the body? Some energetic and enthusiastic member could always be found who would be willing to act as curator. The society could take advantage of the law allowing scientific organizations to import glassware, reagents, etc., duty free, thus reducing the cost to a minimum. Would not a series of demonstrations from such a museum add materially to the interest and value of the meetings? The collection, even though small at first, would gradually increase in size and value by contributions from its members. Many specimens of practical value are now lying useless in nearly every physician's back office.

Lack of time prevents a consideration of many details, but I should be very glad to hear from anyone interested in this plan, and to give any further information possible which will aid in making it a success.

DISCUSSION.

DR. JNO. B. ROBERTS, Philadelphia—I think Dr. Jackson is mistaken in regard to the Pennsylvania law. The medical colleges of Pennsylvania are supplied with material by a state anatomic board, and medical men, unconnected with colleges, may get anatomic material from this board whenever they desire. I am pretty familiar with the law for I was secretary of the committee which secured its passage, and have been for years a member of the board.

DR. FRANCES DICKINSON, Chicago—I would like to ask the Doctor if he has not found that the freezing of embalmed specimens destroys the effect of the preserving fluid to the extent that, on exposure for dissection, decomposition takes place more readily; also what color changes take place where he employs 50 per cent. formalin solution; are the different tissues readily distinguished?

He speaks of force being necessary in filling the arteries with any preserving fluid. In Harvey Medical College we have found that to simply take a two-gallon percolator filled with embalming fluid and hang it not necessarily more than one foot higher than the body that the embalming fluid, entering by way of almost any artery, will then gradually find its way to every tissue in the body. As to filling the arteries afterward with either starch or any other solid substance, one should not use a vegetable coloring matter; it is apt to spread into the tissues. Red lead for arteries is preferable. Shellac, starch and other substances are used for filling. Force is necessary in filling the arteries with solids. If there have been diseased arteries at any point one is very likely to rupture them. Soak sawdust with your embalming fluid and fill the chest cavity of postmortem subjects with it. This, with hypodermic injections of trunk tissues, will preserve the anterior walls of the trunk on which many operations, including hernia, can be well illustrated. Thus one can make much more use of these bodies than postmortem material ordinarily presents. As to covering the bodies with waterproof cloth, our experience has not been good. We tried paraffin paper at one time. We now paint the body with boiled linseed oil, cover with thin layer of absorbent cotton and bandage from head to toe. After bandaging the entire body it need not be left in the horizontal position, but hang it up with no fear of edema of limbs. Use small tongs similar to ice tongs in the ears and keep the body in the ordinary atmosphere without cold-storage or ice-plant and there will be no decomposition on exposure, if good fluids are used. We kept them in the horizontal position originally, but have finally taken to hanging them. It has seemed to us that freezing after embalming destroys the influence of the embalming fluid on the tissues when exposed for dissection. If for any reason the embalming failed I have

noticed that a fly is rather prone to alight on that particular spot where decomposition is taking place. This body is immediately cremated. The room in which we keep our material is open, with no screens and no flies. In cases that have died with cavities in the lungs I would like to ask if it is not essential to close up the air passages, because the fluid gets into the lungs and out of the bronchial tubes to the upper air passages. I believe that all our schools can give their students very much better material, and no longer is it necessary to put on the table before any student any material in a decomposed condition or that will decompose on long exposure. The Harvey Medical College has for three years given its students no decomposing material.

Dr. W. T. Eckley, Chicago—The undertaker is the self-appointed enemy of anatomic laws in general and of the general practitioner. The law in the state of Iowa makes minimal preparations for burial the application of a shroud only. A floater coming down the river is brought ashore, when the undertaker's spy places a shroud thereon and it is thus rendered impossible for any college to claim that body thus prepared for burial. I have known good men to be called bad grave-robbers on account of this lax law. The law, it is true, may permit a physician to take an unidentified body, but the physician can not overcome public sentiment. The essayist misinterprets the facility of enforcing the anatomic law. The value of Dr. Jackson's transverse sections is great. We are in the habit of using similar specimens for class purposes and I can testify to what the Doctor has said as to their value in the class-room. As to the arrangement in connection with county medical societies, many interesting specimens may be collected. The preservation of bodies could readily be brought about by energetic young men who are scientifically inclined. I would like to suggest that he extend this embalming process to the domestic animals and present these also to rural societies.

Dr. Jackson, in closing—I am glad to learn that I was mistaken about the Pennsylvania law. I had the information from the Secretary of State who was probably mistaken. As to decomposition after freezing, I have not noticed any special tendency, provided the body has been thoroughly embalmed before the freezing. It is not necessary to have cold-storage in order to keep these bodies, although it is a very useful adjunct, especially in large schools. I have seen bodies preserved perfectly year after year without cold-storage. As to the color changes, these specimens speak for themselves. The color is much less injured by formalin than it is by alcohol. The different organs and the different tissues are well differentiated from each other. Seven or eight pounds' pressure is usually employed in filling the arteries. Low pressure is all that is necessary, but it must be kept up for a considerable length of time. Ordinarily, gravity pressure will be perfectly satisfactory. From 10 to 12 hours are usually necessary when low pressure is used. Put in all the fluid that can be injected with safety. Sometimes you will find, especially if the cadaver is decomposed somewhat before you get it, that the capillaries of the nose and mouth will rupture. They should be plugged with gauze until the pressure stops the flow of the liquid. Dr. Eckley's suggestion that we study the anatomy of the lower animals in the same way is a good one and material for such study is abundant everywhere.

Traumatic Diabetes.—In two cases of traumatic diabetes described by L. d'Amato in *Annali di Nevrologia*, xx, 1 and 2, the diabetes assumed a very severe form. One was a man of 52 who fell from a tree, the other a boy of 13 hit on the hand with a club. The diabetes mellitus observed was evidently nervous, that is, due to derangement in the action of the nervous system on the organs which regulate the combustion of sugar. The same alterations were found in the pancreas in both these cases, as in the so-called diabetes from atrophy of this organ. The microscopic alterations in the liver were peculiar, differing from those observed in diabetes or any other affection, as illustrated in the colored plates. The nervous symptoms included profound asthenia, apathy, incontinence and impotence, with abolition of the knee-jerk.

ACQUIRED NON-MALIGNANT STRICTURE OF THE RECTUM.—CAUSES, SYMPTOMS AND TREATMENT.*

W. DUFF BULLARD, M.D.
NEW YORK.

The position here taken by the writer was assumed by him first in an article published in the *New York Medical Record*. On that occasion he expressed the opinion that the "great majority of observers had been led to consider syphilis the causative factor in the production of rectal stricture by the fact that this condition has most frequently been observed in syphilitic subjects." Since that time he has become more thoroughly convinced of the correctness of this view, and he still believes that it is much more rational to assume that syphilis is not immediately responsible for such lesions. The following reasons appear to him to justify the stand he has taken:

Endarteritis is a well-recognized state in syphilis. This change in the vascular system, combined with the resultant low state of nutrition, renders the mucosa of the rectum less resistant to irritants and trauma. Under these circumstances small losses of the epithelial covering, which would readily be restored in healthy individuals, remains unhealed and constitutes the beginning of simple inflammatory or ulcerative conditions. Examples of this are offered in the indolent healing of wounds and in the delayed union of fractures in syphilitic subjects.

Surgical operations within the rectum and in adjacent tissues are quite common causes of rectal stricture. Many such cases are reported as sequels to all types of operation, most frequently, perhaps, after surgical intervention in hemorrhoids and anal fistula.

Pessaries, glass enema tubes, a fall on the buttocks, bones, pins and foreign bodies of various kinds that have become impacted in the rectum, are all likely to cause ulceration and subsequent stricture.

In the writer's opinion, the primary syphilitic lesion occurs in the rectum only in victims of passive pederasty or otherwise as the result of direct contagion. There is very little destruction of tissue produced by chancre, and the tendency is for it to run its course to spontaneous healing in from four to six weeks. Mucous patches may also occur in the rectum as a secondary manifestation of syphilis. As is well known, the fauces and pharynx are the parts most frequently affected by this type of the disease. The symptoms here are more aggravated by irritants, such as tobacco, alcohol, etc. Men are more subject to these irritations. Why should the female rectum be the structure in which the mucous patch proceeds to stricture, while the male organ escapes? Let the syphilographer tell us how many patients suffer from symptoms of ulcerated mucous patches in the rectum at this stage of syphilis. The writer believes their answer will be that no case showed symptoms of rectal disease which were not present before the syphilis was contracted.

Tertiary lesions and the ano-rectal syphiloma of Fournier are looked upon by most authorities as the cause of most non-malignant strictures of the rectum. The ano-rectal syphiloma is supposed by them to be a diffuse infiltration of all the lower part of the rectal wall, causing an hypertrophy which encroaches upon the lumen of the canal. It is the writer's opinion that,

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

although such a process occurs, it is neither caused by, nor characteristic of, syphilis. On the contrary, in his opinion, it is due to chronic local irritation, or more frequently to external causes, such as will subsequently be described under the head of stricture from cellular deposit.

In regard to the occurrence of circumscribed gummatous swellings in the rectal wall, as several authorities claim, there seems to the writer to be no reason why such deposits, if they do occur, should not be as readily influenced by anti-syphilitic treatment as they are in other parts of the body. Since authorities state that they do not respond to specific treatment, the writer believes it is safe to assume that no lesion in the body is syphilitic that does not yield to specific medication; indeed, he would go further and say that he is convinced that syphilis *per se* is not a causative factor in stricture of the rectum. The more frequent occurrence of stricture in the female rectum can, he believes, be accounted for on the basis of the greater liability to traumatism to which the latter is exposed. Every coitus and every pregnancy affect the rectal wall, and every inflammatory process in uterus, tubes or ovaries may exert a pernicious influence.

The varieties of lesions that tend to produce stricture of the rectum may be divided into two large classes:

1. Lesions external to the bowel, producing mechanical obstructions and circulatory disturbances resulting in involvement of the rectal wall.
2. Lesions originating in the wall of the bowel itself.

LESIONS EXTERNAL TO THE BOWEL.

As has already been indicated, lesions external to the bowel operating to produce rectal stricture are of more frequent occurrence in the female than in the male subject.

This is undoubtedly due to the fact that in the former the rectum lies in closer proximity to the organs of generation, which are more subject to radical changes than in the latter. Disease of the vulva or vagina, as manifested in the cicatricial contraction following old non-syphilitic ulceration, chancroidal disease, extensive gonorrheal inflammation, and, most common of all, traumatisms, as illustrated by the ruptured perineum, directly affect the rectal wall. Enlargement of the uterus in pregnancy or any disease of the adnexa, if allowed to progress, interferes with proper performance of the rectal functions. Pressure is exerted upon the elastic rectal wall, thereby producing a rounded spur which projects into the lumen of the bowel. If there be added to this a constipated habit and the straining necessary to force the hardened feces beyond this spur, the continuity and integrity of the rectal wall are menaced. This condition, if unrelieved, obstructs the circulatory efforts of nature which are essential to the sustenance of the mucosa. The mucosa gradually loses its elasticity and vitality, until, by constant irritation, the stools erode the epithelium covering the spur. Ulceration now takes place, and the steps between this stage and stricture of the rectum are short.

This sequel can, perhaps, most frequently be observed in patients suffering from adherent retroflexed uterus; but it may also result from the action of any mass encroaching upon the normal caliber of the rectum. Nature, apparently realizing the dangers to which the rectum is exposed, endeavors to overcome them by dilating the canal into what is called the "rectal pouch." If, however, this "rectal pouch" is surrounded by a plastic exudate from a contiguous pelvic peritonitis, cellulitis, periprostatic or pelvic abscess, the power of adapting itself to the mass of feces is lost. Under these circumstances the pressure necessary to push a stool beyond the obstruction may be likened to an attempt to force semi-fluid material through an old stiffened section of rubber hose having a partial kink in its caliber. Dilatation occurs above the kink until sufficient pressure is exerted to force a passage or to burst the tube. The inflammatory deposit may so interrupt peristaltic action as to give rise to obstruction.

Stricture resulting from such a condition is likely to consist of an hypertrophy of all the walls of the bowel for three or four inches above the point where the lumen of the gut is encroached on by the inflammatory deposit. This results from Nature's efforts to force the contents of the rectum through the adherent and obstructed portion of the bowel. Later, when dilatation results from constant pressure above, ulceration and pocketing occur. This is observed only in those well-advanced cases in which treatment had not been applied or in which the real trouble had not been recognized.

Chancroids frequently occur at the anal margin and cause fissures and ulcers about the anus. The author, however, does not believe that they are the cause of stricture except in those cases in which the action of the sphincter is impaired or in which they are allowed to progress to the phagedenic type, and the induration that follows such an extensive process causes a migration of leucocytes into all the neighboring tissues that later become organized into firm tissue. The function of the rectum is to expel all irritating substances and not to draw them in. If chancroidal poison were carried directly into the rectum, we surely would find that nearly every prostitute had a stricture of the rectum.

LESIONS OCCURRING IN THE RECTAL WALL.

Tuberculosis is sometimes the cause of stricture of the rectum. The rectum is rarely the primary focus of the disease, but when the system is lowered by tuberculosis of the lungs or the like, the bacilli find a *locus minoris resistentiæ* in the perirectal tissue or in the folds of the mucous membrane itself. If they lodge in the perirectal tissue, a tuberculous abscess is formed with subsequent ulceration and stricture. If the mucous membrane is first involved, then ulceration at once begins and spreads rapidly, leaving areas of indurated and granulating tissue. This ulceration is most intractable to all forms of treatment, and the infiltration of the rectal wall results in a wide, dense stricture composed of fibrous bands and large areas, the seat of ulceration. The diseases of the colon, such as dysentery, typhoid, amebic colitis, etc., produce ulceration in the rectal wall as elsewhere in the alimentary tract. These ulcerations may not heal readily, and a fibrous stricture results.

In the writer's opinion, gonorrhea exerts no influence in the formation of stricture of the rectum except from direct contagion.

Hemorrhoids is a lesion that exerts the most potent influence. The varicosities, when they become engorged, inflamed and strangulated, obstruct the passage of stools. They may slough off the surrounding tissue. The ulcer thus left is generally at first superficial and of little consequence; but if left neglected it gradually extends through the whole mucous membrane to the submucous layer of the rectal wall. A partial stricture is likely to result from subsequent cicatrization.

Abscess and fistula-in-ano are the most common diseases of the rectum. Abscesses usually press upon the rectal wall, as is shown by the excruciating pains suffered by the patient at stool. If the abscess ruptures

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externally, then small damage is done to the rectal wall. If the abscess discharges internally, a marked ulceration occurs about the opening from the irritation of the infective material carried over its surface by the feces. Granulation of the abscess cavity takes place and frequently results in the formation of a large, soft mass of exuberant granulations protruding in the rectal caliber. This mass causes a necrosis of tissue in that part of the rectal wall contiguous thereto. These strictures are soft, prone to hemorrhage and easily dilated under appropriate and judicious treatment.

Prolapse of the rectum, especially when it originates in childhood, tends to narrow the rectal canal as the result of the thickening of all its walls incident to its repeated fall and reduction, and thus causes stricture.

The symptoms occasioned by stricture of the rectum can be discussed in two classes: 1. Before ulceration occurs. 2. After ulceration occurs.

SYMPTOMS BEFORE ULCERATION.

Stricture of the rectum presents very few symptoms before ulceration takes place. Alternating constipation and diarrhea, a sensation of fulness in the abdomen and of weight in the pelvis, may be all that is present. Every physician should feel that such a condition, not responding to the usual treatment in such affections, is sufficient to call for a careful and thorough rectal examination. Occasionally a patient will not present even so many symptoms as above mentioned. The only trouble that would attract attention to the rectum as the cause of difficulty may be a slight throbbing pain at the anus and a feeling of nausea after stool. The stools of a patient suffering from stricture of the rectum are necessarily different in character from those occurring in the healthy subject. They usually consist of small, hard, rounded lumps of fecal scybala not unlike a number of grapes separated from the common stalk. The so-called ribbon-shaped stools are rarely seen, and then only in those cases in which the stricture is at the anus or is forced down to it by the act of straining. They are of little diagnostic value, as they may be caused by a spasmodic contraction of the sphincter when no stricture is present. As the stricture becomes dense, and the tissue organized into fibrous bands, the symptoms become more severe. There are now distension of the abdomen, impairment of digestion, eructation of gases, and distress after eating. Fecal masses can be felt in the transverse and descending colon. The patient now begins to suffer from tenesmus, and is obliged to go to stool time after time to pass but a few lumps of fecal matter and an excessive amount of muco-purulent material from the irritated mucous membrane of the bowel. The fecal masses begin to act as foreign bodies and cause a catarrhal inflammation of the whole intestinal canal, with its attendant mucous discharge and septic absorption.

Relief is temporarily obtained from the use of cathartics, but the process repeats itself again and again, exhausting alike the patient and the intestinal functions. If the patient become constipated, acute obstruction may occur and a fatal issue result, unless operative interference is at once instituted. This is more likely to occur if the stricture is in the sigmoid or high up in the rectum, where the intestine may twist on itself in its peristaltic efforts to push the obstruction onwards, than if it were low down in the rectum where all the force is concentrated on a mass held steadily in position by the surrounding organs and a tight meso-rectum.

SYMPTOMS AFTER ULCERATION BEGINS.

The author believes that, as a rule, ulceration is the first step in the production of a stricture of the rectum, and consequently cases with as obscure symptoms as detailed above are the exception and not the rule.

The symptoms of ulceration of the rectum should at once attract the attention of the physician. Pain, muco-purulent discharge and tenesmus are characteristic. The patient is called to stool any number of times in twenty-four hours, to pass only a few scybala surrounded by a quantity of slime and muco-purulent material streaked with blood. If the patient consults a physician when these symptoms are first noticed and proper treatment is instituted, he should be cured and the sufferer thus protected against the formation of stricture of the rectum. Only too frequently, I fear, the general practitioner prefers to temporize with a serious condition that needs the care of a specialist as much as does a new growth of the larynx. An ulcer of the rectum will rarely respond to internal treatment, even if it is supplemented by the use of an occasional suppository. Treatment locally to the diseased area, and that alone, is essential. A few additions to the physician's regular armamentarium and some training should suffice to render local treatment of an ulcer of the rectum possible in a practitioner's office. The result should be nearly as satisfactory as is the treatment of an ulcer anywhere on the limbs or body, instead of being a *"bete noir"* as now.

The writer believes that nonmalignant stricture of the rectum would become a rare condition instead of a comparatively common one could the general profession be brought to realize the importance of local treatment and apply it in ulcer of the rectum. If the ulceration is neglected, it gradually extends, the symptoms grow more severe, and the patient becomes exhausted from the constant drain on the system and the tenesmus. Nature endeavors to remedy the evil and cicatricial bands and inflammatory deposit narrow the rectal caliber. Then appear the symptoms of deranged intestinal functions, the abdominal soreness and pain, distention, eructation of gases, nausea, occasional attacks of vomiting, localized areas of peritoneal inflammation surrounding the diseased mass, chronic obstipation and septic absorption, until the patient succumbs to acute obstruction or exhaustion.

DIAGNOSIS.

The presence of stricture of the rectum can easily be discovered if the physician understands the use of the numerous instruments at his disposal. The Kelly tube and Kelsey's modification of the same can be used to explore for stricture as high as the middle of the descending colon. Great care should be taken not to attempt to force any instrument by an obstruction. The instrument should be removed and an attempt made to pass a soft-rubber bougie. It is better at first to use a large size, a No. 8 or 10. This large size will distend the folds of mucous membrane. If this soft instrument seems to catch, some soap suds or olive oil should be injected through the opening in the center of the bougie and another attempt made very gently to pass the bougie onward. If resistance is still met with, there is very good reason to believe some obstruction exists. The bougie should be removed and notice taken how many inches of it were introduced before the obstruction was reached. A Kelly tube may then be introduced about the same distance as the bougie, its obturator removed and with the assistance of an electric headlight the distal end of the stricture can easily be observed and its caliber accurately measured. A hard-rubber olive-headed bougie on a

small flexible metal stem can then be introduced through the tube directly into the lumen of the stricture. It is not desirable for diagnostic purposes to force a large size through the stricture. It is safer to pass one that is nicely adjusted to the lumen of the stricture. By this means the depth of the stricture and any excessive narrowing of its caliber higher up can readily be determined. The resistance to the return of the bougie after it has passed the upper limit of the stricture determines its proximal end as readily as in the case of a urethral stricture. With some experience the operator can detect the exact nature of the stricture, whether of a dense fibrous type or of partially organized tissue with an excessive amount of ulceration. The metal stem on the bougie employed by the writer is very small. As soon as the olive head has been introduced into the stricture the walls of the stricture can be perfectly viewed through the tube as they are gradually distended by the onward passage of the bulbous head.

TREATMENT.

The treatment of these strictures should be governed by the peculiar conditions present in each individual case. When the stricture is found to be quite wide and thick and of large caliber, with considerable ulceration, the treatment should be directed toward curing the ulceration.

Stimulating, cauterizing and protective applications should be made directly to the ulcerating areas. Healing will usually attend the conscientious and skilful use of such applications. The inflammatory deposit about the stricture, which is constantly increased by the irritation of infective materials on the ulcers, will begin to be absorbed, and the bowel wall will become less rigid and more amenable to gradual dilatation. As soon as the irritation is overcome Nature will cause the disappearance of a surprisingly large amount of this partially organized material. Just in proportion to the physician's success in overcoming this irritation and infiltration of tissue is the prognosis good or bad. The longer the duration of the disease the more fully organized the tissue will be and the less will it respond to the efforts of Nature to absorb it. The prognosis, then, in an old case should be guarded as to complete or rapid recovery. The author believes that the vast majority of cases in which the patient is not already suffering from chronic obstruction, when first seen, can be made more comfortable by the above briefly outlined treatment than by any operation at present at our disposal. When the disease has progressed to such an extent that the stricture is of a very narrow caliber, the patient greatly reduced and suffering from chronic obstruction, radical treatment is at once demanded. Here operation is the lesser of the two evils.

There are several classical methods to relieve these advanced cases. It is not the author's intention to give a description of these operations here, as they have been fully described in numerous works on general surgery, as well as in several works devoted entirely to rectal diseases.

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DISCUSSION.

DR. W. J. MEANS, Columbus, Ohio—The etiology and symptoms of non-malignant stricture of the rectum are pretty well understood. How to permanently cure stricture is a problem that is far from being settled. Various operative procedures have been devised and advocated, but experience has shown their inefficiency to produce permanent results. Linear proctotomy, either external or internal, just as the case demands, seems to give the best results. My observation has been that good results can be obtained in some cases by making the incision obliquely through the tissues instead of at a right angle as taught by some text-books. If the stricture is low in the rectum, the margins of the incision after divulsion can be closed with fine catgut sutures. This does away with the raw surface that has to fill in by granulation. If it is necessary to make an external proctotomy, the fibers of the muscles should be divided in the same manner. If there are no contrary indications the ends of the fibers can be sutured after divulsion and the raw surface covered. It is the same method used in the division of tendons.

DR. D. C. HAWLEY, Burlington, Vt.—A satisfactory classification of the strictures of the rectum is not easily made. The statement that syphilis has very little bearing on the question I think is correct. In conditions of irritation, inflammation or ulceration of the rectum, in which syphilis exists in the patient, it may be a factor, but is not the main factor in the case. It is important in the consideration of the etiology of rectal strictures to bear in mind that they are not cured nor much affected by specific treatment. Judging from my experience the majority of strictures of the rectum, including those referred to by the author as due to traumatism, may be called inflammatory. The two principal symptoms of rectal strictures are obstipation and ulceration followed by diarrhea. Stricture may be most easily diagnosed by digital examination if it is not situated too high up in the rectum, but if it is beyond the reach of the finger, the method which has come lately into use, called proctoscopy, is valuable and one which may give us very early information. Two methods of treatment only have in the majority of cases been satisfactory to me, viz., dilatation and posterior proctotomy.

PATHOLOGY OF UVEITIS.*

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Properly speaking, the term uveitis should be applied to an inflammation of any portion of the uveal tract which embraces iris, ciliary body and choroid; and an inflammatory process in any one of these structures, if severe and protracted, may involve the other divisions. Hence we frequently have cyclitis and choroiditis associated with severe iritis, if not caused by it, and likewise in suppurative choroiditis and even in certain types of protracted plastic choroiditis the iris and ciliary body become affected.

Thinking it better to limit the subject, this paper will consider particularly lesions of the choroid.

CLASSIFICATION.

A satisfactory pathologic classification of the forms of choroiditis is difficult, for although we recognize that these forms differ as to their etiology, the situations of their lesions, and their clinical appearances, yet their pathologic anatomy is by no means so varied. However, the usual division into purulent or suppurative choroiditis and plastic choroiditis seems a simple and convenient one. Whether or not we should add to this a third division, namely, serous, to explain some of the insidious, slow forms that so frequently have associated with them so-called serous inflammation of the ciliary body and iris, together with slight changes in the vitreous, is a question. It would seem to be simpler to omit this and consider them all as belonging to one of the two divisions, suppurative or plastic. Undoubtedly the liability of this part of the uveal tract to any form

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

of inflammation is largely due to the extraordinary richness of its capillary system, which even exceeds that of the alveoli of the lung. It is estimated by Vierordt and by Wedl and Bock that the blood current of the chorio-capillaris as compared with the arteries that supply it is enlarged more than thirty-two times, and in consequence of this the current is markedly reduced, both in velocity and strength. Every active hyperemia of the arteries and every passive congestion of the veins of the eye must make itself felt in the increased tension of the choroid. Again, should there be any change in the tunica intima or the vessel walls because of the circulation in the blood of any deleterious substance, this slowing of the current would encourage the heaping up of leucocytes on the walls and diapedesis into the tissue outside the vessels. This peculiarly bountiful arrangement of the vessels must be an important factor in the pathology of the choroid, and we can understand why many of the lesions have their beginning in the innermost layers.

THE SUPPURATIVE FORM.

In acute suppurative choroiditis there is at first a rapid infiltration of the vascular layers of the choroid with round cells. The vessels become blocked with emboli and thrombi. The external layers and the suprachoroidal space are distended by a fibrinous exudation. The accumulation of pus cells beneath the lamina vitrea lifts up the retina, which soon becomes involved in the inflammatory process and its elements break down. The vitreous becomes turbid. Intraocular pressure is increased. As the severity of the inflammation increases the infiltration works its way forward to the ciliary body and the iris. Exudate appears in the anterior chamber. Marked congestion of the anterior ciliary veins occurs because of the interference of the circulation, and pronounced edema of the conjunctiva, orbital tissues and even the lids results, giving us the well-known appearances of panophthalmitis. The tissue of the sclerotic coat may become infiltrated and softened and by rupturing allow the escape of the purulent, disintegrated contents of the globe. Usually, however, it is the cornea that first gives way. The organization of inflammatory products beneath the capsule of Tenon attach it firmly to the sclerotic and obliterate Tenon's space, and masses of new, firm connective tissue develop around the eyeball. The disease is a septic one and usually some variety of the pus formers may be demonstrated.

Most of the cases are of traumatic origin, but in some of them the infection may be metatastic, as in postpartum choroiditis coming on as a result of puerperal septicemia, which frequently proves fatal. In these cases bacterial emboli in the choroidal vessels or even in the retinal vessels are the starting point of the rapidly destructive inflammation. These cases are frequently associated with ulcerative endocarditis and multiple abscesses in other organs. A form of suppurative choroiditis, probably metastatic in origin, running a sluggish course and not resulting in destruction of the eye, is known as pseudo-glioma. It occurs in very young children, usually under three years of age. There is usually a history of preceding meningitis or of bronchitis or some exanthematous disease. In one case I saw the trouble follow an attack of mumps. The vitreous chamber fills up with a mass of exudate, which may be seen through the pupil lying up against the back part of the lens. The retina may or may not be detached. The choroid is thickened and sometimes shows thrombosis of the vessels and hemorrhages into its substance. In other cases no marked lesion of the choroid is present and the exudate seems to come from the ciliary body. These eyes are frequently removed with a diagnosis of glioma.

PLASTIC CHOROIDITIS.

In considering the clinical forms of plastic or non-suppurative choroiditis, most authors describe them under the headings, disseminated choroiditis, areolar choroiditis, central choroiditis, choroido-retinitis and anterior and posterior sclero-choroiditis. While the different situation of the lesions and the varied ophthalmoscopic appearance make it possible to differentiate these forms clinically, so far as their pathologic anatomy is concerned, at least of the disseminated, areolar and central forms, they are very similar. Examination of such a choroidal lesion at the beginning, will show the capillaries enlarged and surrounded with leucocytes. These round cells, together with amorphous fibrinous exudation, become heaped up in a mass in the layer of the chorio-capillaris beneath the vitreous membrane, which may be slightly raised by the pressure of the exudate. The capillaries are engorged with blood. The pigment layer of the retina remains intact. Seen with the ophthalmoscope at this stage, this mass may look like a small yellowish-red patch, not raised above the surface of the choroid. Such patches are at first discrete, but contiguous ones may coalesce to form larger patches of more irregular shape. As the case progresses these exudation masses are either absorbed or undergo in part organization, so that new cicatricial tissue takes the place of the mass of exudate, and the choroidal tissue atrophies. The elements of the pigment layer of the retina now proliferate, the layer of rods and cones is destroyed and pigment masses may be found in the outer layers of the retina itself, as well as in the margins of the choroidal area because of the proliferation of the pigment cells of the choroidal stroma. In the severer cases the retina becomes adherent to the atrophic cicatricial patches by the growth of the radial fibers outward into the choroid, so that a depressed cicatrix of the retina and choroid results. This cicatricial tissue in the choroid is illustrated in a case that recently came under my observation.

NARRATION OF CASE 1.

Case 1.—John L., a strong, healthy young farmer, 22 years old, was seen by me in March of this year. The only illness of any note in the personal history was typhoid six years ago. No history of syphilis or rheumatism.

Eighteen months before I first saw him, without any assignable cause, his vision failed rapidly so that in thirty-six hours after the onset he stated he was unable to read. Then vision gradually improved so that when first seen by me, R. V.=20/200; L. V.=20/50. There was a central choroiditis in each eye with irregular patches of choroidal atrophy and whitish masses of new connective tissue in the choroid with masses of pigment interspersed.

He was put on large doses of iodid of potassium and at the time of his discharge, May 29, 1902, R. V.=20/50; L. V.=20/20. The condition of the fundus is shown in the drawing, for which I am indebted to Dr. Chas. H. Beard of Chicago.

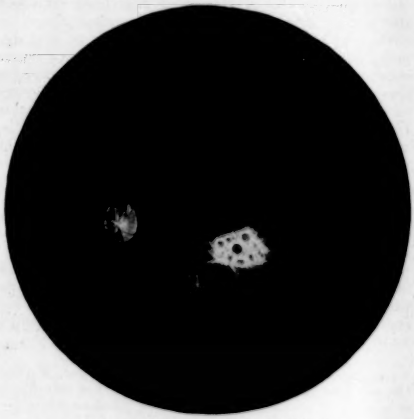
The vitreous becomes cloudy from small particles of exudate and round cells that find their way into it. At this stage the ophthalmoscopic appearance is pronounced. Larger or small irregularly-shaped whitish patches more or less completely surrounded by black borders, interspersed between which are irregular masses of pigment scattered throughout the choroid, make up the picture of disseminated choroiditis. The peripheral portions of the fundus may be most affected, or this may

be free, and the posterior central part may be the seat of the lesion.

The form described by Förster as areolar choroiditis differs in no way from the preceding, pathologically. The mass is made up of cellular elements aggregated in a thickened choroid. There is, however, a proliferation of the pigment layer of the retina, so that with the ophthalmoscope there seems to be at first merely a round or oval mass of pigment. Gradually, with the absorption of the exudate, there is seen the characteristic circular atrophic area surrounded by a ring of pigment.

The diseased patch is sharply differentiated from the normal choroid. The posterior pole of the eye is the part preferably selected, although the region of the yellow spot may escape for a considerable time, it may be years, to be suddenly involved. In consequence of this, central vision may remain good, although perimetric examination of the field will reveal numerous scotomata corresponding to the site of the choroidal lesions.

It is more than probable that the outer layers of the retina derive their nourishment from the capillary layer of the choroid, and for this reason, inflammatory processes in the latter often involve the retina.



Case 1.—John L. Left eye. Erect image.

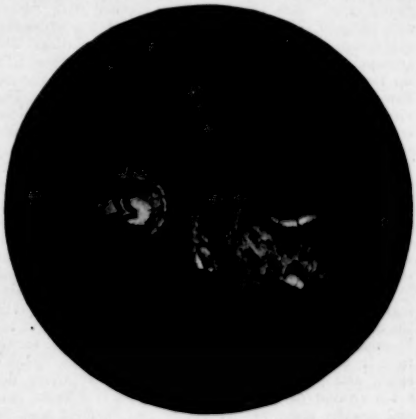
We may have a diffuse or a circumscribed choroido-retinitis and, if the region of the macula is the part particularly affected, the term central choroido-retinitis is applicable.

The pathologic process in these cases is similar and consists in a parenchymatous infiltration of the choroid, which later involves the retina, causing a destruction of the pigment and bacillary layers. Degeneration of the connective tissue of the retinal layers follows, and atrophy of this structure. Immigration of pigment is noticeable in surrounding areas of the retina, this pigment being arranged along the retinal vessels, but not covering them as in pigmentary degeneration of the retina (retinitis pigmentosa). Opacities, at first small, dust-like spots, later larger masses, are seen in the posterior part of the vitreous and obscure the optic disc and vessels. These are more marked in the diffuse form and are said to be always present in the syphilitic form of the disease and to be one of the earliest signs.

According to Schöbl, the vessel walls are thickened sometimes to the extent of obliteration of the lumen, and evidences of endarteritis exist in marked swelling of the tunica intima. Ophthalmoscopically the retinal vessels are seen to be markedly narrowed and in places obliterated. The appearances vary according to the situation of the lesions, the intensity of the inflammation, the stage of the disease and the presence or absence of proliferation in the choroid. A case of central choroido-retinitis that has been under observation for three years, in which there is absolutely no history of syphilis, passed through this course and has resulted in almost total loss of central vision.

NARRATION OF CASE 2.

CASE 2.—Mrs. W., aged 46 years, was first examined by me April 4, 1896. She had slight hyperopic astigmatism in each eye, the correction of which gave normal vision. Media and fundus at the time were normal. Somewhat more than one year later she noticed dimness of vision of left eye, and examination revealed the faintest possible opacities of the vitreous which reduced the vision to 20/30. No change in the fundus. One year later these opacities had somewhat increased and a slight grayish appearance of the fovea was noticed. Vision in that eye had fallen to 20/50. Two months later L. V.=20/100 and the grayish spot exactly in the fovea had grown a little larger. The trouble gradually increased until one year later, Jan. 10, 1900, L. V.=20/200. The vitreous opacities were no more numerous, but there was more change in the yellow spot region. From this time on the central vision became more and more impaired until it reached zero, while the fundus assumed the appearance shown in the drawing, which was made a few days ago.



Case 2.—Mrs. W. Left eye. Erect image. Drawn May 25, 1902.

The patient had some rheumatic or gouty tendencies, not well-marked, however, and was passing through the menopause. The right eye has remained normal.

SCLERO-CHOROIDITIS.

On the edges of the conus found in high degrees of progressive myopia are found distinct signs of inflammation of the choroid. There is a proliferation of the pigment cells on the edge of the affected area and the pigment is heaped up in masses. The capillaries are closed and even disappear. There is an infiltration into the layers of the choroid and even into the sclerotic, the fibers of which become atrophied, so that because of the thinning of the sclera, ectasia may occur. The epithelial cells of the retina disappear over the conus and the layer of rods and cones is not seen over this area.

With the increase of the myopia the atrophy extends to the nasal side of the optic disc and forms a complete ring around it. In advanced cases the changes about the yellow spot speak for an inflammatory condition. Numerous whitish lines and spots of exudate, together with small hemorrhages, are sometimes seen.

Schnabel contends that the appearances of the conus in high degrees of myopia are not due to inflammatory changes, but that they are congenital defects. According to this author, the bacillary and pigment layers were never formed over the area of the conus, and so could not be drawn away.

I have several times observed cases of localized choroiditis with descemetitis similar to the anomalous forms described by Hill Griffith. In these there was dimness of vision coming on suddenly. Examination showed distinct spots on the posterior surface of the cornea, but there were no signs of iritis or irido-cyclitis. In other cases, however, there were iritic complications and also dust-like opacities in the vitreous, so that I am inclined to believe that in most cases where descemetitis is present there is some involvement of the anterior part of the uveal tract. In both choroido-retinitis and central choroiditis I have observed that opacities of the vitreous, so faint as to escape a hurried examination without mydriatic, precede the manifest choroidal lesion, even in cases that are clearly nonsyphilitic.

THE TREATMENT OF CERTAIN NON-SPECIFIC LESIONS OF THE UVEAL TRACT WITH PILOCARPIN AND SWEAT BATHS.*

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The pilocarpin sweat is by no means new in the treatment of diseases of the eye. About 1877-78 we first find mention made of its having been successfully used in various inflammatory affections of the interior of the eyeball. Since that date the literature of the subject is quite extensive. Several authorities, among whom may be mentioned De Wecker and De Grandmont, early recommended its use for the absorption of opacities in the vitreous and of inflammatory products in the choroid. During the succeeding years we find a number of articles contributed by men of good repute who speak highly of the use of the drug, not only in the diseases of the uveal tract, but in detachment of the retina and in optic neuritis and reports of cases in which marked benefit has been derived from its use. While in some cases the pilocarpin was given by the mouth, the majority of observers prefer its hypodermatic administration. In some cases the drug was used alone, while in others it was used in conjunction with mercurial inunctions, potassium iodid, etc., and then without particular regard to the character—specific or other—of the intra-ocular lesion.

THE SCOPE OF THIS ARTICLE.

It is not the purpose of this paper to advocate anything new, but once more to draw the attention of this section to a valuable method of treating certain diseases of the uveal tract that seems to have fallen into desuetude. I shall confine my remarks to a consideration of certain affections of the posterior segment of the eyeball, and shall describe that method of employing it which, in my hands, has been followed by good results, not only in bringing to a standstill the degenerative process that has been going on, but in a number of cases clearing up the inflammatory products and restoring the tissues involved to a normal or nearly normal condition. Although disturbance of the general health is a frequent cause of non-specific lesions of the uvea, the patient giving a history of tuberculosis, anemia, etc., in many instances the chief etiologic factors are shrouded in mystery, the product of infection, when it is due to an infective process, being probably carried by the blood vessels. Although the uveal tract is abundantly supplied with blood vessels, the circulation is at the same time very sluggish and there is probably no other part of the body so prone to inflammatory and degenerative changes.

TECHNIC OF THE SWEAT BATH.

Many lesions of the choroid and ciliary body are in their nature irreparable, but a large minority are capable of some improvement. Notwithstanding the claims of many recent remedies, for example, the internal administration of thiosinamin, subconjunctival injections of mercury, etc., none of them give as good results in selected cases as the judicious use of the hypodermic injection of pilocarpin hydrochlorate in doses of one-eighth to one-quarter of a grain in conjunction with the sweat bath and the internal administration of potassium iodid. The iodid should be given in increasing doses in a large quantity of water until toxic symptoms appear. Although pilocarpin is by no means a new remedy, yet sufficient emphasis has not been placed upon its extreme value in certain deep lesions of the eye. Especially is this true in subacute and chronic choroiditis, hyalitis and opacities in the vitreous.

As the hypodermics and baths should be given when the stomach is empty, there being less danger from the untoward effects of pilocarpin at that time, they are best administered the first thing in the morning. The patient should be in bed and wrapped up to the neck in a blanket and again covered with at least four blankets. Under the latter half a dozen quart bottles containing boiling hot water should be placed. The hypodermic injection of pilocarpin hydrochlorate beginning with one-eighth of a grain should now be given, at the same time having the patient drink at least a pint of hot water, weak lemonade or tea. In a few minutes the patient should begin to break out into a profuse perspiration, which should continue for at least two hours, only stopping short of that time if he shows any bad symptoms. At the end of the sweat he should be thoroughly dried and the skin rubbed with alcohol and then allowed to rest the remainder of the day. This treatment should be continued at least every other day until twelve such baths are taken. At an interval of two or three weeks a similar course of treatment should be repeated, and then continued at various intervals as long as any improvement takes place.

INDICATIONS FOR USE.

In choroiditis, particularly of the exudative variety, I have found the administration of pilocarpin sweats very useful in the early stages before there is any involvement of the retinal elements and before the choroidal pigment has become absorbed. The drug seems to have a beneficial influence in the resorption of the choroidal exudates and allowing the affected tissues to resume their activity. In the more advanced stages of the disease where choroidal atrophy has already taken place, very little improvement of vision can be expected, but even in such cases the further progress of the disease may be checked and the patient retain useful

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

vision. I think under such a course of treatment, before the choroid has been destroyed by atrophy, that we can safely encourage the patient in the hope of a favorable termination of his symptoms.

In vitreous opacities the results I have obtained in a number of cases by such a treatment in producing absorption of the opacities and clearing up of the vitreous have been very gratifying. In the recent cases where the opacities are small, although the vitreous may be so cloudy that the details of the fundus are made out with difficulty and visual acuity is very much lowered, there is usually a rapid clearing up of the exudates and visual acuity, if not fully restored to normal, may be greatly improved, so that useful vision is obtained. In cases of long standing and where the opacities appear as large, dark, irregular masses, the degeneration has been too extensive to expect much improvement from any treatment, and in such cases the prognosis is less favorable. Even in the recent cases the prognosis is not so favorable in those cases occurring in elderly people, still the progress of degeneration may be checked and absorption of a considerable portion of the exudate take place with retention of a useful amount of visual acuity. It is in the young individual where most favorable results are to be looked for.

In hemorrhage into the vitreous the prognosis is much more favorable where the extravasations are small, in which case complete absorption may take place. In the larger hemorrhages more permanent opacities are apt to remain in spite of treatment.

PRECAUTIONS TO BE TAKEN.

I am not in favor of pushing the drug until its physiologic effect is obtained. The disadvantages that are liable to arise from such a procedure are apt to offset any advantages we are getting from the drug, as the treatment may have to be discontinued and can not be returned to for several days. It is important that the treatment should be carried out systematically and at regular intervals if we desire to get results. If sweating is not produced satisfactorily from the first dose, it is well to begin with not more than an eighth of a grain; it can be judiciously increased until the dosage is reached which produces a profuse sweating. I have found that an eighth of a grain is quite sufficient in the majority of instances, although I do not hesitate to give larger doses when necessary. As yet I have not seen any bad effects from the treatment as outlined, although as high as a quarter of a grain of the drug has been used on alternate days for several weeks at a time. I consider its administration subcutaneously more efficacious than when given by the mouth.

ILLUSTRATIVE CASES.

CASE 1.—Mrs. J. B., aged 40, first seen Nov. 23, 1901, had foggy vision in front of right eye with left half of objects more blurred than the right half and could see wavy vertical lines in front more marked toward the left half of vision. R. V.=20/30 — J. viii and with glasses (105 + 0.50 + 0.75) R. V.=20/15 and words J. ii. Some difficulty in distinguishing colors. Field of vision showed a relative central scotoma and several absolute scotomata scattered over lower portion of field. Fields for color absent. No specific history. The ophthalmoscope revealed a fine hyalitis with several small partially movable vitreous opacities at the upper inner quadrant of the vitreous near the posterior surface of the lens. Although there were no gross changes in the fundus a number of small choroidal exudates could be seen situated between optic disc and the macula.

Treatment.—Hypodermic injections of pilocarpin hydrochlorate one-eight grain with increasing doses of a saturated solution of potassium iodid considerably cleared up the choroidal exudation and caused the vitreous opacities to disappear entirely. The scotomata cleared and the field for colors, although contracted, reappeared. In February she had a return of the symptoms but no vitreous opacities, although the choroidal exudates could be distinctly seen and the field of vision showed almost a complete absolute ring scotoma with slight blurring at fixation point. A smaller course of treatment was undergone and after taking twelve of the sweats there remained only a slight blurring where the absolute scotoma had been. Her condition since then has gradually improved and her eye feels very comfortable.

CASE 2.—Mrs. C. S. B., aged 26, L. E. chorioretinitis with patches of choroidal atrophy in macular region and floating vitreous opacities. R. E. choroidal exudates and pigmented patches of choroidal atrophy in periphery. L. V.=20/200; R. V.=20/20.

Treatment.—Pilocarpin sweats on alternative days for one month. Vision in left eye gradually improved until at end of one month L. V.=20/30. No potassium iodid given in this case.

CASE 3.—Henry W., aged 55. Myopic 7 D. in left and 5 D. in right eye. L. V. with glasses =20/40. R. V. with glasses =20/30. Ring-shaped spot in front left eye. In left eye has exudative choroiditis with floating membranous opacities. Right eye chronic choroiditis of myopic type.

Treatment.—Pilocarpin sweats. One-eighth grain increased to one-quarter grain, given for one month with marked improvement in symptoms. Less vitreous opacities in left eye; vision much clearer. L. V.=20/30; R. V.=20/20. At same time taking increasing doses of saturated solution of potassium iodid as high as grs. 240 which was continued with intervals of rest after the sweats were stopped. At present V. with glasses =20/20.

CASE 4.—M. Q., aged 45, first noticed blurring in front of right eye followed by severe frontal headaches. Eyes ache and get red; sharp shooting pains through right eye. Gets dizzy during the day and staggers. The right eye hurts when moved in any direction, especially upward. L. V.=20/30 — J. i slowly. R. V.=20/70 — J. ii unimproved with glasses. Right eye: ophthalmoscope showed a hyalitis with dark cobwebby opacities in the vitreous. The details of the fundus could be made out with difficulty when irregular whitish patches could be seen in the macular region. Left eye: numerous choroidal exudates, especially to the nasal side of the optic disc. No vitreous opacities and media clear. Field of vision contracted in both eyes with a central blurring in field of right eye.

Treatment.—Pilocarpin sweats one-eighth grain increasing to one-sixth grain and increasing doses of saturated solution of potassium iodid. In ten days the headache, pain and soreness in right eye had become much less. L. V.=20/20 — J. i; R. V.=20/50 J. viii. The vitreous opacities were smaller and less numerous and the details of the fundus were better seen. At the end of one month: L. V.=20/15 J. i; R. V.=20/40 — J. iv. No vertigo, no headaches and no soreness on moving the right eye. The field of vision is only slightly contracted and the central scotoma has entirely disappeared from field of right eye. The vitreous still contains a few floating opacities and the fundus still shows some choroidal changes.

CASE 5.—Miss G. L., aged 17. Right eye: iridocyclitis, choroiditis. No details of the fundus can be made out on account of the floating opacities in the vitreous. Keratitis punctata. R. V. — fingers at 3 feet.

Treatment.—The iritis was treated with atropin, hot applications and dionin. After the acute stage of the iritis had subsided a course of pilocarpin sweats on alternate days was given hypodermically and saturated solution of potassium iodid in increasing doses, administered internally. At the end of twelve sweats the vitreous was much clearer and a hazy view of the fundus could be obtained, when a number of choroidal exudates scattered over the fundus could be seen. There were also fewer exudates on Descemet's membrane. R. V.=20/40. After an interval of three weeks the pilocarpin and potassium iodid were again given, the former on alternate days. After ten sweats had been taken the ophthalmoscope

showed there were still present some faint opacities in the vitreous but less dense than formerly. The fundus could be seen distinctly, having a number of choroidal exudates scattered over it but no gross changes were present. The deposits on the posterior surface of the cornea had entirely disappeared. R. V.=20/30 — J. i.

THE TREATMENT OF UVEITIS.*

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In considering briefly the subject of the "Treatment of Uveitis," the author wishes first of all to disclaim, as he did several months ago to our distinguished chairman, any intention of offering anything new or original in the therapeutics of this condition. In the limits of a paper like the present one we will have to content ourselves often with very brief references to some methods of treatment, while to others no allusion at all can be made.

After having tried various remedial agents suggested at different times by numerous observers, and too often, alas, with indifferent or no success, I must confess that I am becoming less and less inclined to use with any degree of confidence the many new drugs of whose curative powers we read such marvelous accounts. In many instances I do feel it my duty to give them a trial on some of our clinical patients; in many others, again, the reports are so weird and improbable, or the reputation of the reporter for accuracy of observation is so poor, that it has not seemed worth the trouble to try the remedies even on our hospital patients. I find myself, consequently, more and more disposed to fall back on a few tried and trusty remedies, whose possibilities (as I have discovered many a time) I had not by any means exhausted.

Before undertaking the treatment of a case of uveitis (or, for that matter, of anything else), our first and most important task is to discover, if possible, what is the underlying cause of the disease; what Mauthner would call "die etiologische momente der zweiten Kategorie," and from this get the indication for treatment. In not a few cases our success in treating the ocular condition will depend largely upon our success in discovering the underlying cause, whether it be syphilis, rheumatism, gout, influenza, malarial infection or any one of numerous other causes, and directing our treatment first of all to this.

The various papers on uveitis which have been read to-day show that the subject has taken a very wide range. While the iris is a part of the uveal tract, and while an inflammation of this structure might be included under the term uveitis, there is only one point in the treatment of this disease to which I shall allude to-day, and that is merely a word as to the treatment of specific iritis. In my experience the great majority of the cases of specific plastic iritis are early secondary lesions and require the same treatment as other early secondary syphilides, viz., mercury. My only excuse for referring to this matter is that I have seen so many cases of this disease in which iodids or mixed treatment had been prescribed by other men generally considered good ophthalmologists. In most of these cases, it seems to me, that there is no indication whatever for the use of the iodids.

The observation of Snellen[1] is doubtless familiar to you all. In a case of so-called iritis serosa with increased tension he did a sclerotomy and one of the small masses of exudate on the posterior surfaces of the cornea came out, and when examined microscopically was found to be, not a cluster of cells, but a collection of microbes, very short bacilli. In a second case he found cells, and between these he found microbes similar to those found in the first case. From these observations he concludes that descemetitis is sometimes a disease, *sui generis*, due to microbes whose toxins cause irritation of the uveal tract. While this observation of Snellen would tend to show, therefore, that the condition may be at times a disease, *sui generis*, it is generally admitted that in most cases punctate keratitis or descemetitis is not a disease, but merely a symptom, perhaps of a process which long since ran its course.

Some months ago there was a man who made the rounds of the different eye clinics of New York City who presented this one symptom (of dots on Descemet's membrane) to as marked a degree as I have ever seen it. There was no redness or sensitiveness of the eye or any evidence of any acute process, and there was comparatively little visual disturbance, only numbers of unusually large dots on the posterior surface of the cornea, most numerous below, and evidently the remains of an old process, as they were absolutely unchanged during the period he was under observation, which was several months. Such a case, however, is unusual, for generally after the process is at an end the exudation or dots on the cornea disappear.

Recently I saw a case at the New York Eye Infirmary where the symptoms of punctate keratitis at once established the diagnosis, and consequently the treatment. The patient, a young hostler, complained of defective vision of only a few days' duration, and was turned over to an assistant for examination. The case was a very recent one, the media (with one exception, subsequently to be noted) were perfectly clear, and there was an opaque area at the macula with just a faint suggestion of redness at the center, and the assistant, who was not by any means a novice, made the diagnosis of embolism of the central artery of the retina, a condition to which on superficial examination it did have considerable resemblance. But more careful examination with dilated pupil disclosed, however, numerous dots on Descemet's membrane, especially below. As soon as the assistant's attention was called to this feature of the case he appreciated at once its significance, and that it established the existence of some inflammation of the uveal tract and promptly revised the diagnosis to that of choroidal exudation at the macula. Located as it was the visual disturbance was immediate, and we saw the patient very soon after the beginning of the process and before there were any vitreous opacities, which soon afterward showed themselves. The patient gave a clear specific history and was at once put on appropriate treatment.

Every one probably has his own favorite method of securing rapid mercurialization, as it is so often necessary to do in specific eye troubles. First and most important of all, in my opinion, is inunction persistently employed. From two to eight grams of blue ointment, according to the individual and the severity of the case, should be rubbed in daily; in children one to three grams can be employed daily. A prominent genito-urinary surgeon of New York with whom I have seen cases in consultation, uses as an adjuvant when especially quick results are desirable, the following:

B. Salicylate of mercury.....gr. iii
Benzoinol 3i

M. Inject 3ss deep into the gluteal muscles every four days, shaking well first.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

Schirmer of Greifswald uses the following:

B.	Hydrarg. biniodid	25
	Potass. iodid.	25
	Aq. destil.	25

M. Sig.: One Pravaz syringeful in the gluteal muscles.

Internally, I am in the habit of giving small doses of calomel (gr. 1/20) every hour, watching the teeth carefully.

Where time is not such an important element, I would still prefer inunction, using less of the ointment and interrupting the treatment from time to time. In specific cases I have accomplished most in the absorption of the vitreous opacities which attend exudative choroiditis by the use of the iodids. As to the subconjunctival injection of solutions of sublimate in these cases I have little experience. I found them painful and not followed by any surprisingly beneficial results in several cases of parenchymatous keratitis. The case of choroidal exudation just referred to ran a course of several weeks, having at the end of this period a large plaque of choroidal atrophy at the macula with a large central scotoma. In a similar case of specific origin I might be tempted to give the subconjunctival injection of sublimate a trial, hoping that possibly more rapid limitation of the process might be secured. In Deutschmann's clinic[2] this method was employed in seven cases of so-called iritis-serosa with exudative deposits on Descemet's membrane, and in twenty-nine cases of choroiditis or irido-choroiditis, and his conclusions were as follows: In three of the iritis-serosa cases the course was as good as, though no better than, with the usual methods of treatment. In three cases the improvement was so striking (only three injections about a week apart) that one could not but ascribe it to the sublimate injections. As to the irido-choroiditis cases, sometimes the result was negative where a similar negative result had followed other treatment; in others, again, the injections had a decidedly favorable influence where other treatment had failed. Deutschmann thinks it is especially indicated in specific eye diseases. The pain following the injection varies, usually lasting two to three hours, and leaves a conjunctival swelling for one to eight days, or longer. Usually a 0.1 per cent. sublimate solution (1-1000) is employed, of which 1/10 of a Pravaz syringeful (i. e., 0.1 m. g. of sublimate) is injected.

Careful investigations by Stuelp[3] and Addario[4] have demonstrated that these subconjunctival injections of sublimate could not operate through any bactericidal effect, inasmuch as they did not penetrate into the interior of the eye in any demonstrable amount. The favorable results following their use must depend, therefore, upon the fact that they cause an acceleration of the circulation, especially of the lymphatic circulation. Mellinger thinks that the same results would be produced by injecting solutions of salt (¾ per cent.), and his suggestion has been followed by many. Pflüger claims to have found the subconjunctival injection of iodid and chlorid of sodium efficient in cases, 1, of chronic central and peripheric choroiditis, especially the cases of progressive myopia complicated with choroiditis at the posterior pole, frequently localized concentrically about the papilla; 2, in the cases of opacities of the vitreous, usually combined with puncture of the anterior chamber, which increases the effect of the injections.

Schirmer[5] is of the opinion, however, that in recent inflammations sublimate injections accomplish more than the salt solutions.

If the punctate keratitis is not dependent on specific diseases, other treatment may be more satisfactory. Recently a patient came under my observation at the New York Eye and Ear Infirmary, who had been previously under treatment at another institution, where a diagnosis of conjunctivitis had been made. There was, however, no secretion, merely a slight and uniform injection of the whole ocular conjunctiva of both eyes, which almost entirely disappeared on deep pressure, as also after the instillation of a few drops of adrenalin, to soon return, however. The patient, a young married woman, the mother of three children, was in good health and complained of no pain or visual disturbance, but merely of the redness of her eyes. The iris was of normal appearance, the reaction of the pupil normal, as was also the appearance of the fundus, and the vision, with some hyperopia corrected was 20/30. It was thought that it might be a case of vasomotor paresis, and a mydriatic was employed. Then, under these more favorable conditions, my assistant discovered a very few faint spots on Descemet's membrane in both eyes, and the nature of the condition was then apparent. There was a uveitis of both eyes, which, in my experience, is very infrequently met with, especially where it begins in each eye at the same time. There was no evidence of specific disease, and the patient was put on atropin, hot bathing and salicylate of soda, 80 grains a day, with inunctions of mercurial salve, as I do not by any means limit the use of mercurial inunctions to specific cases. Where there is no evidence of specific disease I have generally secured better results with the salicylate of soda in large doses than from the iodids, giving as was suggested by Gifford in sympathetic inflammation,* from 50 to 150 grains a day, according to the severity of the condition.

I recall a patient with a distinct rheumatic history whose vitreous several times became so clouded that it was impossible to see the fundus, but each time cleared up entirely under salicylate of soda. Within a month I have seen a patient, a middle-aged lady, who complained of defective sight in her right eye and very careful examination revealed a very fine haze in the vitreous (vision corrected was 20/40). This patient was gouty and had been under treatment for this condition by her family physician. It seemed most likely that the irritation in the uveal tract might be caused by gout, and I felt warranted in putting her on salicylate of soda.

The etiology of some of these cases is obscure, and they sometimes last a long time and appear to be little influenced by any treatment. In one of my patients, a lady about 45 years of age, the condition started as a keratitis punctata and subsequently there was a fine haze in the vitreous, which lasted for over two years, being sometimes more, sometimes less apparent. She was at the menopause, and it was not impossible that the ocular trouble was in some way associated with the vascular and other disturbances incident to the menstrual irregularity. At no time was her vision less than 20/20, and yet the slight vitreous haze annoyed her excessively. At various times during the two years she was under treatment, I employed the iodids, the salicylates, pilocarpin and other diaphoretics, as well as atropin in the eye, and yet nothing seemed to have much effect in clearing up the vitreous opacities, which gradually faded away after she ceased to menstruate.

The treatment of chronic uveitis in elderly people with more or less marked choroidal changes at the macula and associated often with great visual impairment, has been most unsatisfactory in my hands. I do not remember that I ever saw a case improve under any form of treatment; in fact, the visual impairment of most of

the cases I have observed has gradually increased. It has been my usual custom to prescribe iodid of potassium in these cases, but I must confess that I have seen very little, if any, benefit follow its use.

Pflüger, of Bern,[7] contributed recently an article on the subconjunctival injection of hetol or cinnamic acid. He says that Landerer has employed intravenous and gluteal injections of hetol in the treatment of tubercular processes, according to whom it produces a general leucocytosis. An aseptic inflammation about the tubercular foci is caused, leading to the development around and throughout the tubercle first of leucocytes, then of embryonic connective tissue and vessels, and finally of connective tissue encapsulation and to the absorption of the cheesy masses. The histologic changes produced by cinnamic acid injections in tuberculous conditions are, according to Landerer, the same as are observed in the natural healing of tuberculous processes, only they are more active and energetic.

Pflüger endeavored to avail himself of the artificially produced leucocytosis in numerous ocular conditions. He found the hetol injections harmless and unassociated with any ill effects, and claims to have had good results in numerous ocular inflammations. He used a 1 per cent. solution of which he injected 0.4 to 0.5 c.cm. every other day, using massage for a few moments afterward and leaving the eye unbandaged. The pain is inconsiderable and lasts only a few minutes. I have tried it in one or two cases recently. The pain is not considerable, but it is too soon to tell what are the results. Pflüger claims to have seen good results from this treatment, among other conditions, in cases of uveitis of various etiology and various clinical forms, often with iritis, or irido-cyclitis serosa as a complication with deposits on Descemet's membrane. He states that he has seen severe chronic uveitis combined with diffuse haziness of the cornea greatly benefited by hetol injections.

I have seldom employed blood-letting except in very severe forms of iritis, but Fuchs, a man in whom I have very great confidence, says that in suitable cases blood-letting is of decided value, using either the natural leech (5 to 10) or Heurteloup's artificial leech (1 to 2 cylinders full). In inflammation of the conjunctiva, iris or ciliary body, he takes the blood from the temple, while in deep inflammation, as in choroiditis, retinitis or neuritis, he advises the blood-letting to be from the mastoid.

There are few cases of uveitis in which atropin is not indicated as oftentimes also moist heat and at times diaphoresis, as by sweat or hot-air bath, or pilocarpin internally or hypodermically.

Schirmer,[8] in a recent article on the subject of traumatic inflammations of the eye, bears testimony to the great value of inunction of mercury in traumatic uveitis. Professor Haab at the Utrecht Congress in 1899, recommended iodoform as an intra-ocular disinfectant. But to go at greater length into the large subject of the treatment of traumatic or post-operative uveitis would carry us far beyond the limits of this paper.

To recapitulate briefly it may be said:

1. That the etiology of the ocular inflammation is to be investigated in order to obtain some general therapeutic indication.

2. That in general in acute processes of specific origin, mercury, best by inunctions, is indicated, aided, if necessary for the absorption of exudates by iodids.

3. That mercurials are often of service even where there is no specific cause demonstrable but that here oftentimes salicylates accomplish more than the iodids.

4. That atropin is pretty generally indicated, aided, if necessary, in severe inflammations by moist heat and diaphoresis.

5. That subconjunctival injections either of sublimate or chlorid of sodium may sometimes be tried. They can do no harm, though it is not yet certain how much good they accomplish or just what are their indications.

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DISCUSSION

ON PAPERS OF DRS. DE SCHWEINITZ, WOODS, FRIEDENWALD, HANSELL, WILDER, WOODRUFF AND MARPLE.

Dr. George E. de Schweinitz, Philadelphia—I would like to emphasize, as my colleague, Dr. Friedenwald, has done, the great importance of investigating the fundus in these cases, for in practically all of them some form of choroiditis can be found. There is one other point, and that is, that where you find descemetitis in association with scleritis and episcleritis, there is pretty sure to be a choroiditis underlying it. I would like to say a word in regard to treatment. I agree with Dr. Marple that the old methods are the best. I have never seen a case in which some good could not be obtained with mercury. I have used subconjunctival injections very much, but have had little result in some cases, but good results in irido-cyclitis, always using now the salt solution, having given up the bichlorid. I believe it is the stirring-up of the lymphatic circulation and not the therapeutic action of the drug that produces the beneficial effect. As to the operative treatment, in some cases, where the angle is filled up, operation may do much good in opening it.

Dr. James H. Shorter, Macon, Ga.—Since I moved South I have been struck with the great number of cases of the type Dr. de Schweinitz describes, among negroes, and also its great prevalence among females, and would like to ask Dr. de Schweinitz if they do occur more frequently in females. In a good many of these cases where there was a tendency to constant though intermittent progression, I have often noted a tension as low as minims 2, especially at times of acute exacerbation. At such times the use of atropin did good and brought tension up to normal. There was often an increase of the trouble with each menstrual period. As to the etiology of this disease, I have not been able to find out anything. Syphilis does not seem to be a factor, though so extremely prevalent in the negro race. The prognosis is of the worst. In spite of all treatment the disease always steadily progressed but usually slowly until there was complicated cataract, densely opaque cornea, etc. I tried pilocarpin, iodid of potassium, subconjunctival injections of mercury and other remedies, but no treatment seemed of any value.

Dr. J. E. Colburn, Chicago—I have been struck by the recurrence of certain types of uveitis in the late winter or early spring months and only recently have reviewed a few cases that have been, some of them, for a number of years, under my observation, and where I could predict the return of the patient about March or April with a recurrence of the disease. In this class of cases I have usually found that the elimination by the kidneys is extremely low; that the urine will pass over week after week without varying much from 1008 or 1010 and in which the solids and uric acid are extremely low. Sometimes there is a slight suggestion of albumin and mucin and yet the whole picture is of functional albuminuria rather than structural. I have often had to have them seek a more salubrious and temperate climate; some of them have gone South and to California and have had but slight attacks and some no recurrence of the attacks. I have found it well to use some aid in elimination—the Turkish bath, salicylate of sodium or strontium and mercurials, and they will often pass

over the spring months without a recurrence of the attack. Within a few weeks I saw a patient that I have had under observation for ten years, a woman, who came to me with a very serious condition, her vision being 2/200 in each eye. Almost without exception she has had a return of the trouble during the latter part of each winter. I was surprised on one occasion to find that the irides were attached to the lens at the lower outer segments, and she had well-defined triangular markings in the anterior chambers. The patient has been pronounced free from any organic disease. I saw her this spring with lowered vision, but hope to relieve her condition by the use of eliminants.

DR. LEARTUS CONNOR, Detroit—In the more marked cases of these conditions it has occurred to me to secure results that were very pleasant to the patient by the administration of potassium or sodium iodid, preferably the latter, beginning with very small doses and systematically increasing them, giving it in milk and increasing one grain a day, with an occasional sweat or purge, the doses being increased until they are very large, even in feeble people. Under this treatment the general condition as well as the local condition of the eye improves. A very essential thing is not to give a big dose to start with and it is well to write down on a blank the method of increasing so that there will be no mistake. If the condition of nutrition does not improve then, of course, the remedy is contra-indicated, but I have not found a case in which it did not improve.

DR. E. J. GARDINER, Chicago—I use the iodid of potash in the manner described by Dr. Connor and get very good results. I would like to call attention to the detail in the management of these cases, that has not been mentioned—exercise in the open air with the eyes properly protected, regular exercise in the form of walking I have found very helpful.

DR. HIRAM WOODS, Baltimore—In answer to Dr. Shorter's question about sex, Griffith's cases were confined almost entirely to young females. The majority of my patients were females, the primary attack coming during the second decade of life. I agree with Dr. Woodruff as to the use of pilocarpin. I put the patient to bed, administer pilocarpin for diaphoresis and follow it up with salicylate of sodium, or where I find syphilis, mercury. In reference to the use of atropin, mentioned by Dr. Marple, I would like to ask him if he thinks there are contra-indications for its use. If so, what are they? I have never seen increase of tension in these cases of plastic choroiditis, and always feel safer when the pupil is dilated. The tendency to extend forward is great.

DR. W. B. MARPLE, New York—I think Dr. Woods must have misunderstood me. I did not mean to say that I knew of cases where atropin was contra-indicated, but simply that there may be acute cases of uveitis where it is not indicated. I almost invariably use it and consider it indicated.

A NEW SCHEME OF THE ZONES AND CENTERS OF THE HUMAN CEREBRUM,

WITH REMARKS ON CEREBRAL LOCALIZATION, ESPECIALLY WITH REFERENCE TO OSTEOPLASTIC OPERATIONS FOR BRAIN TUMORS.*

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It is my intention in this contribution to present without extended comment or study of the literature of the subject, new diagrams of the zones and centers of the human cerebrum, and on the basis of these schemes to indicate a series of cranial areas for operation in cases of brain tumor. In 1898 I published a scheme of brain centers which is reproduced in the diagrams (Figs. 1 and 2). Then as now I believed in the separate localization in the cerebrum of the representation of sensation and of movements. My views regarding this subject have not changed in any essential particulars, and were presented in detail at the meeting of the American Neurological Association held in Boston, June, 1901.[1]

Recently acquired clinicopathologic facts regarding cerebral localization are chiefly of interest in connection with the question of a separate center for the so-called stereognostic perception. The weight of evidence favors the location of this center in the superior parietal convolution (parietal of Wilder), and its correlative convolution on the mesal aspect of the hemisphere, the precuneus or quadrate lobule. Some reference may be made

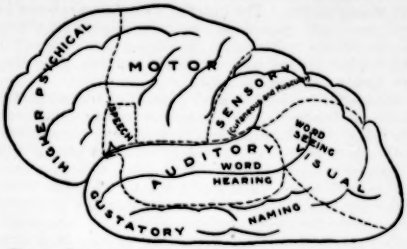

Fig. 1.—Zones and centers of the lateral aspect of the human cerebrum (1898).

here to evidence on this subject already presented by the writer in other papers. In several cases of brain tumor recorded by me,[2] when astereognosis was present, the evidence indicated the localization of the lesion in the postparietal region—certainly always in the region posterior to the central fissure. Astereognosis was especially prominent in tumors involving the superior parietal convolution. It is important to recall here that in some of these cases motor paralysis was absent for some time after astereognosis became a well-marked symptom. In growing tumors of the postparietal region paralysis sooner

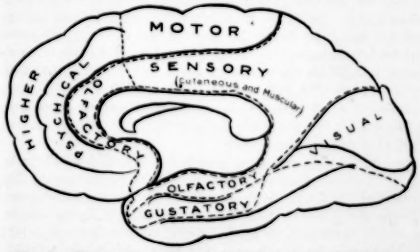

Fig. 2.—Zones and centers of the mesal aspect of the human cerebrum (1898).

or later nearly always becomes a prominent manifestation, first as a pressure and later as an invasion symptom.

Other cases with astereognosis (associated with sensory symptoms) have been recorded in recent years by Burr[3] and by Walton and Paul.[4] Starr and McCosh long since recorded a case with loss of the muscular sense as the result of operation for the removal of a small angioma at the junction of the superior and inferior parietal convolutions. At the time when this paper was published, astereognosis had not become the subject of investigation by neurologists.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Richard Dewey and H. A. Tomlinson.

In 1901[6] I put on record a case in which astereognosis and ataxia were present, but not motor paralysis, and in which autopsy showed a large area of softening confined to the superior parietal convolution. This was an especially valuable case, as the astereognosis could not be attributed to distant pressure—an objection which possibly might be made if the lesion were a tumor, and yet in tumor the astereognosis is doubtless a symptom of lesion of the parietal lobe. Others have contributed facts bearing on the location of a stereognostic area in the postparietal region.

For the reasons above given, and for others which I can not at this time consider, the stereognostic center has for the present been located by me in the superior parietal convolution. It probably extends over the edge of the hemisphere into the precuneus. The centers for cutaneous sensibility have been placed in the limbic lobe, and also in the posterior half of the postcentral convolution, between the stereognostic center and the motor region. The centers for muscular sensibility have been located in the superior and inferior parietal convolutions, presumably not in exactly the same position as the region for pure astereognosis. We are not yet in a position to accurately demarcate the regions for stereognosis and the muscular sense, and between these and the areas for cutaneous sensibility if the last has, as seems probable, a representation on the convexity of the hemisphere. Recent experimental investigations, as those of Sherrington and Grünbaum,[7] would seem to indicate that the motor region is largely and perhaps almost entirely in front of the central fissure. If this should eventually prove to be true, it may be that the representation of cutaneous sensibility is, in part at least, in the postcentral convolution. The investigations of Flechsig, which will be referred to presently, are of interest in this connection. For the present, so far as the lateral aspect of the cerebrum is concerned, I have, as above stated, simply placed the cutaneous sensory representation between the stereognostic and motor regions in the posterior half of the postcentral convolution.

As the question of the separate representation of a stereognostic sense is of vital importance in discussing our scheme of brain centers, an additional word or two might be said about the clinical study of astereognosis. Neurologists of equal merit have drawn contradictory conclusions with regard to astereognosis as a distinct clinical phenomenon from cases which have been recorded with elaboration and evident care. By some it is held that astereognosis is never present without sensory loss on the one hand, or without motor impairment on the other. My own observations have led me to the conclusion that we may be confronted, as regards astereognosis of cerebral origin, with at least three classes of cases: (1) cases of what might be termed sensory astereognosis, in which inability to recognize the nature and character of an object by manipulation is dependent largely or altogether on sensory impairment; (2) cases in which a similar incapacity is due largely to motor impairment, which might be regarded as instances of motor or mechanical astereognosis, and (3) cases of pure astereognosis. Cases belonging to the third category are rare, but I have observed two such cases, and one or two have been observed by my colleague, Dr. Spiller. These patients, although showing neither anesthesia nor paresis, though possibly a very slight impairment of the sense of position detected only by careful testing, are unable to recognize different objects by manipulation. With regard to the cases of the first two categories, it should be remarked that in most instances an admixture of pure astereognosis with sensory or motor astereognosis is present in the same case, this being dependent on the fact that lesions and especially gross lesions commonly implicate adjoining regions of representation.

The question of ataxia of cerebral origin is one that needs to be carefully considered in connection with a revision of the diagrammatic schemes of the cerebral centers and zones. As stated at the beginning of this paper, it is not my purpose to go into any lengthy discussion of the mooted questions concerning the functions of the brain, but rather to present only sufficient data and comment to make clear the reasons for any new topographical arrangement. Like astereognosis, ataxia, when a symptom of cerebral disease, may be present, (1) as an isolated manifestation; (2) in combination with astereognosis; (3) in combination with motor paresis, or paralysis, or (4) in combination with both astereognosis and motor paresis or paralysis. Pure, uncomplicated ataxia of cerebral origin, like pure astereognosis, is rare, and can only result from a peculiarly restricted lesion, one which involves the centers or tracts for a portion of the so-called muscular sense. I have spoken of three forms of astereognosis, namely, sensory astereognosis, motor astereognosis and pure astereognosis. Similarly at least three forms of cerebral ataxia need to be considered, and these, according to Oppenheim,[8] are caused by lesions in three different localities, the motor region, the internal capsule and the parietal lobe. On this subject Oppenheim speaks as follows: "If the ataxia is caused by a disturbance of the motor zone it is frequently associated with motor irritation and always with paralytic conditions. A very pronounced ataxia can not arise in the motor area of the cerebral cortex because the process causing this produces so marked a grade of paralysis that this conceals the ataxia. The disturbance of sensation associated with ataxia of this origin is, as a rule, slight. It can involve single sensory qualities or all sensory qualities with the exception of the sensation of pain. The sensory impairment, however, is not confined to the sense of position. The ataxia produced by lesion of the motor cerebral region is, as a rule, a monoataxia, seldom a hemiataxia. It is not associated with hemianopsia. If the ataxia is the result of a lesion of the internal capsule (*carrefour sensitif*), it is almost always a hemiataxia. In addition, it is always associated with a hemianesthesia, which not only is distinctly present, but implicates more or less all qualities of sensation. As a rule hemianopsia is also associated with it. Affections of the parietal lobe cause ataxia implicating arm and leg of one side or only one extremity, especially the arm. Symptoms of motor irritation are absent or rather the result of action at a distance. Likewise paralytic phenomena are absent or are not pronounced. A disturbance of sensation has always the character of partial hemianesthesia in that with intact pain and temperature senses, the tactile sensation, and especially the sense of position, as well as the stereognostic perception, is diminished or abolished. All this, however, is felt only so long as the disease process does not penetrate into the medullary substance of the parietal lobe and also not towards the median surface of the hemisphere."

In the same connection Oppenheim says that the postcentral convolution is a border zone, and the distinction, as regards the effects of lesion, between it and the postparietal region can not always be sharply made.

In our scheme muscular sensibility as well as stereognosis has been located in the postparietal region, and it is to be presumed that ataxia, due to limited post-

parietal lesion, results from impairment or obstruction of this region of representation. The term muscular sense is, perhaps, not altogether desirable, as it may represent more or less than that which is necessary in the process of coördination; in the present state of our knowledge it is, however, the most convenient term. What is known as the sense of position is most markedly disturbed in cerebral cases with ataxia and with astereognosis.

In a cerebral case presenting ataxia and astereognosis, with little or no motor impairment, and with only slight or moderate impairment of sensation (as partial tactile loss and impairment of the sense of position), the diagnostician would certainly turn to the postparietal region for the site of the lesion.

The motor area remains much the same in the new scheme as in the diagram of 1898. It has, however, one important difference. After much consideration I have concluded to place the irregular line indicating the posterior limits of the motor area on the lateral aspect of the hemicerebrum so that it extends from above downwards through the middle of the postcentral convolution; that is, in a line about midway between the central and the retrocentral fissure. I have already referred to the experiments and observations of Sherrington and Grünbaum, which tend to show that the motor region is largely, if not entirely, in front of the central fissure. Flechsig, as will be seen later, believes that the tactile radiations go largely to the postcentral convolution, and others, as v. Monakow,[9] Bruns[10] and Oppenheim, hold that the postcentral convolution should be regarded as a border or merging zone between the parietal lobe and the motor region. In this state of the subject, with the old views indicating that the postcentral convolution is a part of the motor zone, it would seem best for practical purposes to follow the plan above described and shown in the diagram, Fig. 5. It is particularly desirable when the question of surgical procedure is pending, to recognize the fact that the purely motor area is very largely cephalad of the central fissure, and yet that some motor representation may exist along its posterior border.

The auditory center has been made to include the retroinsular convolutions as well as the posterior part of the first temporal convolution. The reason for including the retroinsular convolutions will appear when the investigations of Flechsig are discussed. The posterior portion of the second temporal convolution has been set apart as a separate center, which has been provisionally designated as the equilibratory center. Formerly I included a portion of this convolution in the auditory center, but it is not improbable that if the auditory center proper, which is the cerebral representative of the cochlear nerve, is situated in the first temporal and retroinsular region, that the adjoining portion of the second temporal convolution may be the cortical representative of the vestibular nerve, as has been suggested by Flechsig. Whether equilibratory may be regarded as the best designation for this center is doubtful, but no better suggests itself at present, and the entire matter of the cortical terminus of the vestibular branch of the eighth nerve may be regarded as tentative. Dana[11] suggested the right temporal lobe as the probable seat of cortical vestibular representation. The author's views and the status of the entire subject prior to 1898 are presented in the following quotation from his treatise:[12]

"It is probable that the cerebral representation of the vestibular nerve is distinct from that of the cochlear, and Dana has suggested that this representation is in the temporal lobe, and especially on the right side, basing this view on two personal cases of focal lesion of the right temporal lobe, and also on a study of the meager literature of the subject. Bechterew[13] believes that the evidence afforded by the cases compiled by him justifies the hypothesis that the prepeduncles (anterior cerebellar peduncles) are connected with the upper portion of the parietal lobe, but Dana holds that, while the muscular sense may be impaired through destruction of this lobe, the true spatial sense is not affected. Bechterew and others believe that they have shown that the temporo-occipital region is connected with the cerebellum of the opposite side by a band of fibers which pass by way of the medipeduncle, the pontile nuclei, and an external bundle in the crus. That this is not connected with the first and upper and anterior part of the second temporal convolution was shown by Spiller and the author.[14] In a case of cerebral abscess situated at the posterior part of the external capsule, and involving the medullary substance of the first temporal and part of the second temporal convolution and also the posterior part of the lenticula, this band of fibers was not degenerated. Dejerine[15] has shown that the external bundle of the crus is formed by projection fibers which come from the temporal lobe, and especially from the second and third temporal convolutions, and he also believes that this fasciculus remains intact after lesion of the occipital lobe, differing in this respect from Bechterew. In the 'naming center' case (page 345), in which a tumor involved the midtemporal region and chiefly the left third and fourth temporal convolutions and subjacent medullary substance, one of the first symptoms complained of by the patient, five years before her death, was vertigo; and this was a recurring phenomenon. She did not, however, suffer from ataxia or forced movements. In Dana's two cases destructive lesions were present in the middle portion of the right temporal lobe, and in both vertigo and forced movements were important symptoms. It must not be overlooked that in one of these cases, at least, the dura was markedly involved, and that vertigo is a well-known symptom of irritative dural disease. The membranes were not, however, involved to any extent in the other cases, and special forced movements are not characteristic of pachymeningeal vertigo."

The entire visual area is placed in much the same positions as in the older diagram, namely, so as to occupy the calcarine region on the mesal face of the hemisphere and the entire occipital lobe and the posterior extremity of the inferior parietal convolution on the lateral face of the hemisphere. I have made two subdivisions of this visual area in the new scheme, one of which is designated as the lower visual area and the other as the higher visual area. The lower visual area is the center for half retinal representation, the region destruction of which on one side causes lateral homonymous hemianopsia. This region in the new scheme occupies mesially the cuneous or calcarine region and on the lateral aspect the first occipital convolution. It corresponds to Flechsig's visual projection system as shown in the diagrams, Figs. 3 and 4. The higher visual area embraces the remainder of the occipital lobe on the lateral aspect of the hemisphere and a small portion of the inferior parietal convolution; in other words, the so-called angular convolution in part and the rest of the convex portion of the occipital lobe not included in the lower visual area. In this higher visual area word seeing and probably letter seeing have their representation. Object imagery I have placed anteriorly just outside of this higher visual area, a subject which will be considered shortly.

The olfactory and gustatory centers occupy the same position as in the earlier diagrams.

I have always advocated a higher psychical localization in the prefrontal region, that portion of the brain anterior to the usually accepted motor area. I have adduced some new facts in support of this view in the paper published in the *Philadelphia Medical Journal*, April 20, 1901 (cited above). Other evidence is gradually forthcoming, as in a paper by Phelps.[16] It is probable that the left prefrontal lobe has more importance as a higher psychical region than the right.

I have also long held that between the sensory and motor cerebral centers for speech exists a concept area, in which probably is a naming center. This has been located, on theoretical grounds and as the result of a few clinicopathologic observations, in the midtemporal region.[17]

The cases of so-called optic aphasia recorded by Oppenheim, Pick, Manasse[18] and others belong in the category of cases which help to demonstrate the existence of a separate concept area for names. The patients are able to see perfectly an object shown to them, but they do not know how to give it its name except by touching it or through the sense of hearing, if it is an object which gives forth a sound or if its name should be mentioned in the presence of the patient; when, for instance, the object to be named is a bell, the desired word is found when the bell is rung. According to Pick optic aphasia seems to point to the location of a lesion in the posterior portion of the second and third temporal gyri. It has been shown that meningitis or extradural abscess of the middle fossa may give rise to optic aphasia.

The observations made and the results obtained by surgeons and aurists with regard to the aphasic disturbances in otitic abscess of the left temporal lobe are of interest in discussing this concept naming center. In twenty-five cases collected by Merkens[19] word deafness was observed eight times, disturbance of repeating words twice, disturbance of writing seven times, disturbance of reading nine times, and mind blindness four times. One constant symptom, however, was found in all twenty-five cases, which Merkens designates as word dumbness (Wortstummheit), and which in addition to paraphasia is characterized chiefly by an inability to find the right names for objects. The patients recognize the objects and know their uses, but are not able to give their names, the substantives being wanting. Sometimes the disturbance is observed only in connection with optic impressions, but at times in addition from acoustic and tactile impressions.[20]

It is probable that a great general area which might be termed the concrete concept area is intercalated or placed between the various sensory percept centers and the region universally recognized as motor. This area would include the precuneus, parts or the whole of the superior and inferior parietal convolutions, and parts of the second, third and fourth temporal convolutions as indicated in the diagrams, Figs. 5 and 6. With this general concrete concept region are subareas or centers with special functions. The stereognostic center, which has already been somewhat fully discussed, is an area for the representation of concrete concepts of a relatively low type—those concepts which are obtained not directly through the senses or their motor impressions, but by processes which have been evolved from sensory and motor impressions. The center which is concerned with the attaching of names to the concepts of an object obtained through the different senses is also probably located in this region, as is also a center for object imagery. With regard to the last it must be noted that it is probable that a lesion of the center in both hemispheres is necessary for the production of those forms of mind blindness or mind deafness which indicate that the centers for object imagery are impaired or destroyed. In four of Merkens' cases, it will be recalled, that mind blindness was present.

In the construction of any new diagram of brain centers the researches of Flechsig[21] must be taken into consideration. My own views regarding cerebral localization coincide in several important particulars with Flechsig's general scheme of zones and areas. In Figs. 3 and 4 are combined two sets of diagrams given by

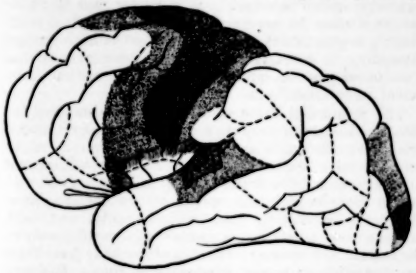

Fig. 3.—Flechsig's association areas, lateral aspect.

Flechsig. The shaded areas represent in the main his primordial zones, which include projection radiations or systems, sensory and motor; the unshaded posterior area is intermediary zones, and the unshaded anterior area is terminal zones. An effort has been made in the diagram also to represent the numerous subareas or centers which have been isolated by Flechsig, thirty-six in all, but as it is not necessary for my purpose to consider these in detail they have not been numbered.

One of the latest and most condensed expressions of Flechsig's views is to be found in his paper presented

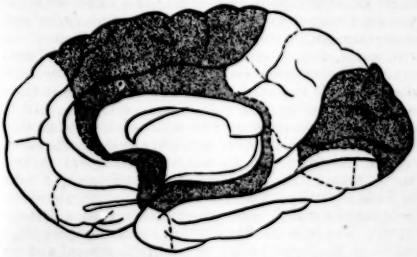

Fig. 4.—Flechsig's association areas, mesal aspect.

to the International Congress of Physiologists at Turin. Flechsig holds that in the cerebral cortex, as elsewhere in the nervous system, groups of nerve fibers develop step by step in orderly succession. The stages in development are especially indicated by the period of myelinization, or the investment of medullary substance. In some cortical regions myelinization has begun fully three months before fetal maturity, while in others it has not started three months after birth. Equally important groups of fibers develop at about the same time. Clearly defined circumscribed myelogenetic areas appear at certain stages of development. At the time of the

presentation of his paper to the Turin congress Flechsig estimated the myelogenetic cortical areas which could be sharply differentiated at thirty-six. He classifies his myelogenetic areas into three great groups: (1) primordial zones, or regions of early development; (2) intermediary zones, or regions of intermediate development, and (3) terminal zones, or regions of late development. As the most convenient method of subdivision he places under his primordial zones the areas from 1 to 10 inclusive; under his intermediary zones from 11 to 30 or 31 inclusive, and under his terminal zones the areas from 31 or 32 to 36 inclusive. He is uncertain about his area number 31, which he believes presents individual variations. Under his third or terminal zones he ranges those areas in which myelinization begins about one month after fetal maturity. According to Flechsig, "every area possesses a special anatomical position, and therefore also a special functional importance."

The primordial zones of Flechsig are composed almost exclusively of projection fibers, sensory and motor, or, to use Flechsig's own terminology, corticopetal or corticofugal. While the views of Flechsig with regard to localization differ from those of the writer, the two are in more accord than would at first sight appear. Cutaneous sensibility, muscular sensibility, and each of the special senses, has a special myelogenetic area in the cortex; so likewise movements of the body have their representation in special myelogenetic areas. Flechsig believes that for every sensory (corticopetal) path there is a corresponding motor (corticofugal) tract. He says that it may be especially remarked with regard to his myelogenetic area number one, which corresponds with some closeness to the central convolutions, that the tactile radiation is distributed mostly to the postcentral (ascending parietal) convolution, while the tract which is undoubtedly motor originates from the precentral (ascending frontal) convolution. While a purely sensory or purely motor region can not be outlined, the area has a preponderating sensory and a preponderating motor subdivision. This is in accord with the experiments of Sherrington and Gründbaum, and with the growing tendency to place the purely motor centers and zones very largely in front of the central fissure. It is probable, as I have always contended, that the sensory and motor areas are separate, although they may be side by side and show a tendency to digitate at their contiguous borders rather than to commingle. It is not likely that neuron systems will arrange themselves side by side with absolute regularity, like the lines of a map. Alongside of the auditory (cochlear) myelogenetic area in the first temporal convolution, Flechsig finds a corticofugal area or radiation which he believes may be motor, although this has not been demonstrated. The cells and fibers which constitute this radiation lie at the lower border of the first temporal and in the furrow which separates it from the second temporal convolution. Motion of the body and head immediately consequent upon auditory impressions may be performed through the intermediation of these corticofugal fibers which pass in the columns of Türck. Similarly it may be that motions like the turning of the eyes and head immediately consequent upon visual impressions may be represented in corticofugal radiations close by or in the visual zone. Motions consequent on gustatory sensations, as smacking the lips, or those the result of olfactory sensations, as sniffing, may have representation in corticofugal radiations close by or within the gustatory and olfactory areas. This, I take it, is in general terms the view of Flechsig. If this be the case, the facts do not do away with our old-time motor area. It still remains the great or main motor area representing the movements of any part and in its entirety of all parts of the body—movements which, developmentally speaking, have been called out by cutaneous and muscular sense impressions, and which may still be evoked as cutaneous and deep reflexes from skin, muscles and tendon variously situated in the body. It is the belief of the writer that the cutaneous and muscular sensory areas are close by but separate from the great motor area, while Flechsig's view seems to be that these areas partly coincide. He also inclines to the view that each myelogenetic sensory area or corticopetal radiation has a corresponding corticofugal radiation which probable represents a motor area for each of the senses in question, these sensory and motor areas coinciding or partly coinciding.

Flechsig contends with much force, much critical acumen and valuable evidence, against the idea that the cerebral convolutions in general are provided equally or nearly equally with corona radiata, that is, with projection systems. He shows the weakness of much of the reported pathologic evidence or so-called evidence respecting this matter. He holds that the clinical evidence regarding the symptoms produced by lesions of various cortical areas give results which correspond closely to those obtained by his developmental methods. "Disorders of the motor and sensory functions are observed only in lesions of the primordial zones. The motor zone delimited by Charcot coincides with area No. 1; the zone defined by Henschen (the most reliable worker in this field), lesions of which always interfere with vision, coincides with No. 4, and so on. Of localizing symptoms which occur in lesions of the intermediary and terminal zones the only known forms are some that involve, 1, interference with speech (alexia, optic aphasia, sensory amnesic aphasia, etc.), and 2, partial amnesia (optic, for example). The time to localize these symptoms more definitely has not yet arrived." It is not within the purpose of this paper to go into Flechsig's presentation of facts and arguments regarding all the important points bearing on his theory of primordial zones and of intermediary and terminal association zones.

In Figs. 5 and 6 is given a new scheme of the zones and centers of the lateral and mesal aspects of the cerebrum. In these diagrams the different regions are represented as separated by zigzag lines, to indicate the writer's view, that while the areas are entirely distinct, they have not straight map-like borders. It is inconceivable that cerebral neuron systems should, in the process of development, arrange themselves in a linear manner as is usually represented. One area or center digitates into another, so that the frontiers are always, from the functional standpoint, merging or mingling regions. The border lines are probably much more irregular than indicated by the zigzags used in the scheme. Some of the differences of opinion regarding the limits of certain functional regions, and the coextensiveness of others, are probably to be explained by their irregular borderline.

The prefrontal (higher psychical) area corresponds with the older diagrams, Figs. 1 and 2, and also practically with Flechsig's terminal zones. The motor area both in the old and in the new scheme corresponds closely with those portions of Flechsig's primordial zones which border and are some distance in advance of the central fissure; while the auditory, gustatory and

olfactory centers correspond largely with other portions of Flechsig's primordial zones, as indicated by the shading. Notable differences are, however, to be observed as regards the auditory and visual areas. Flechsig's auditory area includes the posterior portion of the first temporal convolution and the retroinsular convolution. With regard to the retroinsular convolution I might say here that a personal observation made many years since[22] led me to the conviction that this was probably included in the auditory area. This was a case, now well known in the literature of the subject, in which lesions of the superior temporal convolutions on each side were present, allowing an accurate localization of the auditory center. The retroinsular convolutions in this

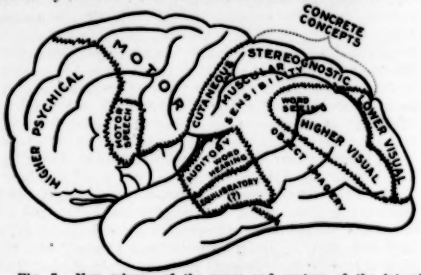

Fig. 5.—New scheme of the zones and centers of the lateral aspect of the human cerebrum.

case were greatly atrophied, justifying the conclusion then reached that these convolutions are anatomically and functionally closely related with subdivisions of the first temporal convolutions, the most posterior of these retroinsular convolutions being continuous with the posterior half or two-thirds of the first temporal convolution. The auditory center in the new scheme is therefore made to include the retroinsular convolutions. In

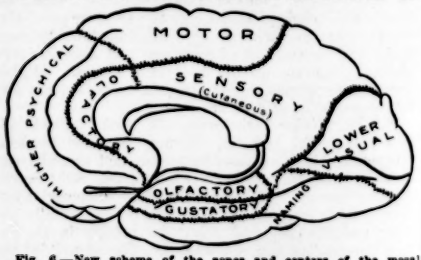

Fig. 6.—New scheme of the zones and centers of the mesal aspect of the human cerebrum.

order to show these convolutions the brain is represented as somewhat pulled apart at the Sylvian fossa in the same manner as in the diagram, Fig. 3, modified from Flechsig. The visual area is still represented as occupying a large portion of the lateral aspect of the occipital lobe including the angular gyre. Flechsig's visual primordial zone, however, reaches only a short distance over the edge of the hemisphere on its lateral aspect. The angular convolution and most of the lateral surface of the occipital lobe is contained in his intermediary zone. As higher visual processes are probably to be referred to this zone, the schemes are not entirely out of accord. It will be noted that the centers for stereognosis and naming are placed in the intermediary zone of Flechsig, the former in the superior parietal convolution, the latter in the midtemporal region, chiefly in the third temporal convolution. I have also indicated as a suggestion merely that a center for object imagery is included in this intermediary zone, but in just what part of it I am not prepared to say. It may be close by the center for word seeing. Tentatively, therefore, the object-seeing center has been placed in front of and below the word-seeing center. As already stated, bilateral lesions are probably necessary for the production of mind blindness, the symptom which is referable to destruction of this region.

As has been said, the general term, concrete concept area, has been given to that region which includes the stereognostic center, the naming center, and the hypothetical center for object imagery. The mental processes having their material substrata in this region which is intercalated between the various sensory systems, are such as are concerned chiefly with concrete concepts. Our concept of an object is obtained through the senses, often through the interaction of several, or it may be of all, the senses. The cerebral areas concerned with concrete concepts are, therefore, most likely to be situated in a region more or less environed by percept centers, and such is the region indicated in Flechsig's diagram as his intermediary zones, and in our scheme as the concrete concept area. Stereognosis is the faculty or function by which an object is recognized through its form without the employment of vision. The idea thus obtained is the result of a higher mental process than that by which the nature or quality of an object is recognized through common sensibility or through the special senses. The stereognostic center is higher than the percept centers; it is intermediate between these and the centers for abstract concepts which are probably located in the prefrontal region. Similarly, the mental process by which a name is associated with the concept of an object which is obtained through the different senses, is a different and a higher process than the processes which go on in the percept centers themselves. Object imagery is also a higher and more special process than that of perception, and has its special representation in the cerebrum, probably in the concrete concept sphere. Loss of power of orientation may also, in special instances, be due to bilateral lesion in this concrete concept area.

A neurologist's views with regard to localization are put to one of the severest practical tests when he is called on to locate for the surgeon a tumor, abscess, hemorrhage or other operable lesion, but if his theories have any real value they will be able to stand the test. Tumors of the brain notoriously give rise to confusing localizing symptoms, because of their compressing, invading and indirect effects, but it is quite possible in the great majority of instances, on the principles embodied in the schemes which are here under discussion, to locate such lesions with more than fair success. For at least fifteen years it has been my duty from time to time to aid in the localization of tumors for operative purposes. In spite of a somewhat general pessimistic tendency regarding operations for intracranial tumors, I am to-day more hopeful than ever before. The osteoplastic or autoplastic operation offers more hope both to the neurologist and to the surgeon than the former method with the trephine and rongeur. When this operation is skilfully performed a cerebral area of large size can be uncovered, and the bone replaced in position will usually retain its vitality.

As the result of much experience I have come to the conclusion that brain tumors show a decided tendency to originate in special physiologic regions, as in Broca's center, in the higher psychical, the motor, the stereognostic, the auditory or the visual region. In the process of growth they may and, of course, do, compress and invade other regions, and they may, of course, originate near or along the borderline between different regions, but I believe the tendency is as above indicated. This being the case, it becomes possible, with a fair approach to accuracy, to map out on the brain and on the skull regions for osteoplastic operations for many of the cases of brain tumor which are presented to the neurologist for diagnosis and to the surgeon for operative procedure. In other words, a series of syndromes or symptom-complexes can be given which indicate regions of the brain and its corresponding areas on the skull for the most frequent operations which the surgeon will be called on to perform. I shall confine myself in this article to mapping out such a series only for the lateral aspect of the left hemisphere. In Fig. 7 an effort has

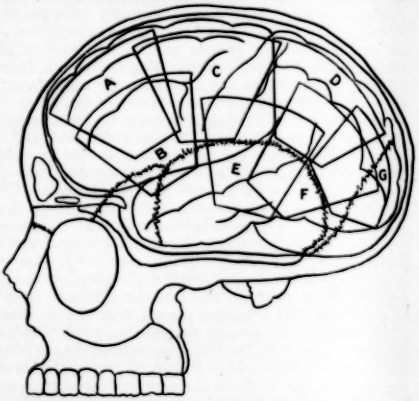

Fig. 7.—Cranial areas for osteoplastic operation, these areas corresponding to regions of the left hemicerebrum with definite syndromes.

been made to indicate seven such regions both on the cerebral hemisphere and on the skull. These areas have been lettered A, B, C, D, E, F, and G. Necessarily, in some cases, the regions overlap. The letters have, therefore, been placed not as would be best if this overlapping did not take place (in the centers of these regions), but some place where two regions do not coincide. I shall give a syndrome for each region—this in every case but one corresponding to some symptom-complex presented by an actual patient studied for the purpose of operation. In each case, first will be given the symptoms which indicate irritation or destruction of the region under consideration, this being followed by a brief presentation of the symptoms of compression and invasion most likely to appear as the tumor increases in size.

A. Higher Psychical Area.—Interference with higher psychical processes as shown in lack of power of sustained attention, impairment of the faculties of reason, comparison and judgment; mental obtuseness; relative optimism; sometimes mild hallucinations and delusions. Among the most likely compression and invasion symptoms are motor agraphia, motor aphasia, monoplegia or hemiplegia. On the negative side are absence of anesthesia, cutaneous or muscular, astereognosis, hemianopsia, word blindness, word deafness, and paraphasia.

B. Motor Speech Area.—Motor aphasia usually associated with some motor agraphia, and paresis, especially of the face. More complete hemiplegia may indicate compression or invasion, as may also some psychical disturbance. On the negative side absence of the same symptoms as given for the area *A*.

C. Motor Area.—Monoplegia or hemiplegia, spasms usually beginning in one limb or in one side of the face, and usually either confined or more marked in the half of the body opposite to the side of the lesion. Tonic spasticity is usually present, and both the superficial and deep reflexes are much exaggerated, persistent ankle clonus and the Babinski response being present. Motor aphasia and agraphia may be compression and invasion symptoms when the tumor spreads cephalad, or affections of cutaneous and muscular sensibility and astereognosis when it increases caudad. Psychical symptoms, except those due to general cerebral irritation, and visual and auditory symptoms are usually absent.

D. The Stereognostic Area.—Astereognosis and hemiataxia, impairment of muscular sensibility and of cutaneous sensibility; the superficial reflexes usually impaired; the Babinski response not present, but the normal metatarsophalangeal response often absent, that is, the toes not moving from irritation of the sole of the foot; the deep reflexes practically normal. Frequent compression and invasion symptoms are gradually augmenting hemiparesis, gradually increasing reflexes up to the point of exaggeration, and hemianopsia. Higher psychical symptoms absent and aphasias usually absent; sensory aphasia present at times when the tumor spreads backward and downward.

E. The Auditory Area.—Word deafness, partial or complete; verbal amnesia and paraphasia. Compression and invasion symptoms may be paresis or paralysis; visual symptoms, such as word blindness and hemianopsia, and impairment of cutaneous and muscular sensibility. Reflexes usually not much altered. Higher psychical symptoms, motor agraphia, motor aphasia and astereognosis usually absent.

F. The Higher Visual Area.—Word and letter blindness and verbal amnesia. Compression and invasion symptoms chiefly auditory symptoms and hemianopsia, although astereognosis, ataxia and motor disturbances may be present. The Wernicke reaction, motor disorders and higher psychical disturbances are usually absent; and the deep and superficial reflexes in the extremities are usually not altered. The superficial reflexes are most likely to be impaired owing to the anesthesia.

G. The Lower Cortical Visual Area.—Hemianopsia often associated with forms of word blindness when the tumor is of considerable size; other localizing phenomena usually absent.

In giving the localizing symptoms for each of these areas I have purposely omitted the enumeration of the general symptoms of brain tumor, such as headache, vomiting, vertigo, optic neuritis and the symptoms of cerebral irritation—these may be present or absent, but are usually present in whole or in part. With regard to the lower visual area which is indicated as reaching back to the occipital lobe of the cerebrum close to the mesal line, it must be remembered that the centers for retinal representation are chiefly in the cortex of the

calcarine fissure and the cuneus on the mesal aspect of the hemisphere, but such a growth will almost necessarily involve more or less of the posterolateral portion of the occipital lobe, and therefore can be reached if at all through the area *G* indicated.

These syndromes by no means exhaust the regions of one-half of the brain in which operations, guided by localization, can be performed. Other regions which might be indicated are the orbital surface of the frontal lobe, which would give especially psychical, olfactory and optic tract symptoms, and the regions in general terms comprised in the lower or inferior portion of the temporal lobe, tumors located in which would give especially concept aphasia, paraphasia and hemianopsia, and one lateral lobe of the cerebellum, the symptoms of involvement in this region giving especially unilateral ataxia and asynergia, nystagmus and compression symptoms referable to some of the cranial nerves. These additional regions can not well be indicated in a single diagrammatic scheme.

While this paper is, of course, intended to be neurological rather than surgical, it may not be out of place in concluding to make a few remarks about osteoplastic operations and the best methods of performing them. In this operation the scalp is usually cut through on three sides in the lines of the three sides of the bone flap intended to be made, as indicated in the cranial areas mapped out on the diagram, Fig. 7. The scalp is not cut through on the basal short side of the flap. The three sides of the flap can be of any size according to what are supposed to be the requirements of the operation which is to be done. After the scalp flap has been cut, the bone flap is usually made with chisels or gouges of special construction. The scalp is left in contact with the bone, except along the lines of incision. In this way a trapdoor of bone and scalp is made, which can be replaced after the operation. The vitality of the bone is maintained by the circulation through the scalp and skull. Much time is usually consumed in the chiseling process, and the hammering in some cases seems to cause serious concussion, these being valid objections to this method of operating, although not sufficient, in my judgment, to overcome its many great advantages. Personal experience also has proved to me that large osteoplastic operations made in this way can be finished successfully; tumors can be removed from the brain and the patient live for months or years. In other words, the operation does not necessarily cause permanent damage. Experience counts for much in this direction, and the surgeon who has performed the operation several times acquires a facility which adds much in the rapidity and certainty of procedure.

Instead of the chiseling process other surgeons resort to small trephinings and the use of the Gigli saw, and in a few cases the dental engine has been used with success. The method of connecting small trephine openings by the use of the Gigli saw is tedious. The dental engine will probably eventually come into more general use, but to be used successfully it requires the skill gained by much practice, and few surgeons have as yet acquired this skill. It is also said to be difficult to keep it antiseptic during operations.

A valuable instrument for cutting an osteoplastic flap has been devised by Dr. T. C. Stellwagen, Jr., a graduate in dentistry and a student in medicine in the Jefferson Medical College of Philadelphia. This instrument was described and the method of using it detailed in a paper read before the Philadelphia Academy of Surgery, March 3, 1902, by Dr. John Chalmers DaCosta, professor of principles of surgery and of clinical surgery in the Jefferson Medical College.[23] Dr. DaCosta experimented with Dr. Stellwagen while the instrument was being perfected, and it has been used by the former successfully in trephining a case of epilepsy in a child.[24]

In the paper of Dr. DaCosta the Stellwagen trephine is described by its inventor as follows: "The instrument, with its parts assembled ready for use, consists of a shaft pierced by an oblong quadrangular hole, through which is passed a piece of steel at a right angle, the projection of this piece of steel being regulated by a set thumbscrew. This device enables the surgeon to cut any desired size of bone-flap. The projection bar has a gear hole forged in its outer or cutting end into which fits the shaft of the movable knife and movable saws, which are used for incising the scalp and for dividing the bone. The saw may be raised or lowered to suit each case and to permit of adjustment to the inequalities of the skull, and, when once set, may be clamped by a thumbscrew. Several different forms of bone-cutting instrument were tried at various times on the cadaver, but were discarded as being conspicuously inferior to the saw." The reader is referred to the paper of Dr. DaCosta for full details regarding this most promising device of Dr. Stellwagen. Much, of course, will depend on the skill and care with which it is used, but I believe that it is another valuable addition to our means of coping with brain tumors.

In connection with the study of a case on which it was proposed to use this trephine, I made some observations on the regions which could be covered by it in operations. It can be so used as to include practically the regions marked out in our diagram, Fig. 7. If, for example, the pin of the trephine is placed the fraction of an inch in front of the cranial line which corresponds to the central fissure and the arm is so arranged as to give a radius of about one inch, and two-thirds or three-fourths of a circle is drawn, leaving an unfinished open space below, or preferably below and somewhat forward, the motor region and a little more would be well covered. According as the symptoms referable to leg, arm or facial regions are more pronounced, the upper extremity of the circle could be placed near or more and more removed from the mesal line. Similarly, by selecting proper points with reference to the mesal line and the anteroposterior line of the skull for the insertion of the pin of the instrument, all the regions which have their superior border near the mesal line of the skull could be readily marked out, and the same, of course, could be done for other regions by carefully selecting the position for the central pin guided by well-known cranial landmarks.

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23. Since the meeting of the American Medical Association at Saratoga in June, 1902, this paper has been published in the Annals of Surgery, July, 1902.
24. It was also used in part since the reading of this paper in a case of brain tumor on which Dr. Deaver operated for the writer.

DISCUSSION.

DR. J. H. MCBRIDE, Los Angeles, Cal.—In one of the figures that the Doctor showed, a part of the superior parietal lobe was marked sensory, though in his remarks I understood him to say that he held that sensory localization was in the limbic lobe. I wish when he closes the discussion he would re-state his position on this point. He spoke of the sense or faculty of orientation. May loss of this faculty be simply functional? I have supposed so from a case of mine that recovered.

DR. WILLIAM J. HERDMANN, Ann Arbor, Mich.—I would like to ask the Doctor whether Flechsig has stated absolutely that there are no projection fibers from the frontal association region.

DR. MILLS, in closing—I have not yet changed my views regarding separate sensory and motor localization, but recent additions to our knowledge, especially some of the investigations of Flechsig and some observations by myself and my colleagues in Philadelphia have led me to believe that there are special subdivisions of the region formerly designated as sensory. Probably the representation of cutaneous sensibility is largely in the limbic lobe, that of the stereognostic sense in the precuneus and its lateral correlative, the superior parietal convolution (parietal of Wilder), while the muscular sensibility is represented in parts of the superior and inferior parietal convolutions. The researches of Sherrington and some other recent observations tend to show that the motor region is in very large part cephalad of the central fissure, and it may eventually turn out that the muscular and cutaneous sensibility is in part represented in the post-central convolutions. These were some of the points intended to be conveyed by my remarks.

With regard to Dr. Herdmann's question, the researches of Flechsig would seem to show, notwithstanding the antagonistic observations of Dejerine and others, that the prefrontal region—the terminal association area of Flechsig—was without any projection system. My views regarding the visual center or area have not undergone any marked change. I believe that the representation of homonymous fields is in the cuneus and the first occipital convolution on the lateral aspect of the hemisphere, and that the higher forms of visual representation, such as word seeing and letter seeing, are more anterior in the occipital region.

Enteric Fever Prolonged War.—At the Sanitary Science Section of the British Medical Association at Manchester, England, September 11, the presiding officer, Sir James Crichton Browne, M. D., emphasizing the necessity for reform in the sanitary organization in the British army, said enteric fever during the South African war had reduced the fighting force by from 70,000 to 80,000 men. But for this the war would have been ended six months earlier and $300,000,000 to $350,000,000 would have been saved. He emphasized the fact that the prevention of this loss was one of the most important advances in increasing the efficiency of the army that could be made.

ETIOLOGY OF CHRONIC NEPHRITIS.*

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Premise: All nephritis is toxic in origin, produced by the action on the kidneys of chemical or microbial toxins.

Under the name chronic nephritis are described slow inflammatory processes affecting both kidneys, due to a pathologic condition of the blood and leading to destruction of the parenchyma, with eventual shrinking of the organs. The most characteristic phenomenon of this affection, as pointed out by Senator, is not its termination in atrophy, but its casual relationship with hematic dyscrasia, for atrophy is met in other renal disease, as, for instance, in ascending nephritis. The cleansing of the blood of its impurities devolves mainly on the kidneys and it seems, therefore, evident that an abnormal condition of that fluid must be the chief source of renal affections. What the special form of hematic dyscrasia is that gives rise to lesions of the kidney, remains as yet unknown. It seems plain that the morbid agent or combination of agents is not the same in all cases. Semmola's theory of an abnormal diffusibility of the blood serum, has proved entirely inadequate. It is probable that a much more complex anomaly of the blood exists.

In those comparatively rare instances where chronic nephritis develops as a result of acute nephritis, the chronic lesion must be due to the same common cause as its acute precursor, the lesion being perpetuated long after the cause has ceased to exist. This is the case, for instance, in the chronic nephritis, subsequent to scarlatinal and puerperal nephritis. Jawein has suggested as a possible explanation of the fact that nephritis may continue on its course even after cessation of the determining cause, that the remaining amount of healthy renal parenchyma is not sufficient for the purification of the blood and consequently the products of disintegration may be in such relative excess as to exert a deleterious effect on the remaining structure. The issue of acute nephritis of infectious origin in chronic nephritis is, however, comparatively rare, the rule being death or recovery in the course of weeks or months. The form thus originated is usually chronic tubal nephritis.

Interstitial nephritis, unlike tubal nephritis, is essentially a chronic malady from the start. Formerly the belief prevailed that all interstitial nephritis was simply tubal nephritis in its final stage. This can not be so in all cases, because tubal nephritis, progressed to the stage of contraction, must, at some time in its course, have been accompanied by definite symptoms of grave illness, especially dropsy. On the contrary, we find the majority of cases of interstitial nephritis presenting no sign of dropsy or other grave disturbance of health until the development of retention symptoms or evidences of cardio-vascular embarrassment. Such cases are examples of primary renal cirrhosis, true chronic interstitial nephritis, in which the connective tissue seems to be the starting point of the morbid process, only secondarily leading to atrophy of the parenchyma. It is possible that if acute nephritis lasted long enough it might lead secondarily to a form of interstitial nephritis, but whether the disease known as chronic interstitial nephritis could result is another question.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

Admitting the possibility that acute parenchymatous nephritis might, under certain circumstances, end in granular kidney, West[1] declares his failure after prolonged and careful observation to establish such a connection and quotes Kauthack in agreement with himself. The end product of such an association would be contracting white kidney or secondary contracting kidney and not the small red kidney or true interstitial nephritis. Even if acute nephritis can be established as an event in the early clinical history of a case, it does not necessarily follow that prior to the attack the kidneys were sound. Although the symptoms of chronic interstitial nephritis become pronounced, as a rule, in middle life, the insidious development of the disease renders it extremely probable that it has existed long before, and it is not uncommon, in the course of such a case, to observe acute nephritis develop. Simple acute nephritis in adults is comparatively rare and when it does occur it is usually an acute inflammatory process, superimposed upon an already existing lesion, generally of interstitial character. Just as in a child, acute nephritis raises the presumption of antecedent scarlatina, so in the adult it may almost be regarded as presumptive evidence that the kidney has been diseased beforehand. In those rare cases of renal cirrhosis in which an apparent relationship with scarlatina or pregnancy exists, it is possible that these factors determine the renal lesion only in conjunction with accessory causes of toxic character.

Gull and Sutton's contention that chronic interstitial nephritis is but one expression of widespread arteriocapillary fibrosis receives little support at present, abundant proof existing that contracting kidney is chiefly produced by causes which operate especially and in the first instance upon the kidneys and not indifferently upon the body as a whole. According to Leyden, these two affections are not without connection, but Wagner, Rosenstein, Dickinson and Furbringer do not share this view. The renal sclerosis subsequent to arteriosclerosis is exceptional in comparison to the cases in which the vascular changes are secondary with genuine chronic nephritis as their origin.

It is probable that only in those rare cases of chronic indurative nephritis associated with advanced senile arteriosclerosis are we warranted in attributing a purely etiologic influence to the arterial changes, the association of arterial fibrosis with renal atrophy in other cases being coincidental, produced by the same underlying toxemia or secondary and directly due to the nephritis. In any true nephritis it is the gland that is primarily affected. It is there the mischief starts and the subsequent atrophy is not produced by disease of the arteries, but results from irritation, which the kidney has been unable to withstand, the arterial and fibroid changes developing as part of the morbid process. Histologically considered, the morbid changes of chronic nephritis differ not in kind, but merely in degree from those of acute nephritis. An etiologic unity may be said to pervade all forms of nephritis, the common cause being toxic irritation of the kidney, with this difference, that in the chronic forms it acts more slowly or by successive attacks.

During recent years the advance of our knowledge regarding the nature and action of organic poisons has led to a much better understanding of the causation of secondary degenerative lesions. The position seems entirely tenable that noxious substances constituted by active agents or various bodies developed by altered tissue metabolism in the economy or introduced from without, by their elimination through the kidneys, produce at length lesional changes in those organs. Examined in the light of this hypothesis, the mode of action of various determining causes of nephritis seems to be satisfactorily defined. Among these causes may be enumerated the disturbances of nutrition, such as gout, chlorosis, diabetes, syphilis, the various cachexiæ, overwork, etc., and diseases involving certain excretory organs, as chronic skin diseases, hepatic and intestinal affections. Considering the operation of certain of these factors, we find nephritis in gout resulting mainly from the elimination of toxic bodies, produced by the hepatic insufficiency, which almost invariably underlies or accompanies the gouty diathesis. The frequent association of nephritis with diabetes may be said to be due to the acid toxins and organic extractive matters, resulting from excessive destruction of albuminoids in that disease. Nephritis following upon chlorosis is recognized as being due to irritation from excretory bodies, produced by excessive albuminoid metabolism, combined with insufficient oxidation and in much the same way pernicious anemia and leukemia may bring about granulo-fatty renal changes. Light is thrown upon nephritis subsequent to chronic skin diseases, by remembering that a dermatitis or severe burn may give rise to renal inflammation by causing the elimination via the kidneys of substances normally carried off by the skin. The chronic nephritis, which occurs during the progress of the cachexiæ, is, according to Gaucher, brought about by toxic alkaloids due to faulty oxidation which are eliminated by the kidneys and cause a high degree of irritation. The nephritis of cancerous subjects is explained by Klemperer in this manner: The uniformity of action of these factors may be recognized at a glance. None of these conditions can exist for any length of time without producing grave interference with nutrition, with resulting formation of irritating toxins, which, in their passage through the kidneys, cause congestion, increased cellular activity, degeneration or necrosis. The urine abnormities under such circumstances are but symptoms of an underlying toxemia produced by the antecedent malady.

While it is thus comparatively easy to interpret the etiology of chronic nephritis secondary to some disease process which stands in direct relationship to it, there remains the large class of primary chronic nephritis which does not offer the advantage of so easy an explanation, having no definite association with antecedent morbid perversions. This class of nephritis, comprising chiefly primary interstitial nephritis or granular atrophy of the kidney, is of extremely insidious development and must depend upon the operation of some cause of very gradual and persistent character. Certain alterations in the vascular system, which are an almost constant feature of the syndrome of this disease, are no doubt in the main contemporary with the renal change and produced by the action of the same irritant as causes the latter.

Various theories have been advanced to explain the pathogenesis of this form of nephritis. Among recent explanations is that of Croftan, who attributes the arterial and renal change of gout and arteriosclerosis and plumbic nephritis to the action of alloxuric bases formed in excess as the result of faulty oxidation and perverted hepatic action.

In the opinion of the writer no cause is so frequent and important in the causation of primary contracting kidney as autotoxemia of digestive origin. The idea

1. British Med. Jour., 1899, vol. 1.

is by no means a new one, having been suggested long since by Murchison, who regarded lithemia arising from functional derangement of the liver as one of the first links in the chain of causes tending toward chronic nephritis. Johnson more nearly approximated the modern understanding of digestive autotoxemia, by maintaining that the proximate cause of chronic nephropathies depends upon a morbid condition of the blood and that the vitiated products of abnormal digestion absorbed into the blood were to be reckoned among the chief of the toxic agencies bringing about the nephritis. Many authors of more recent day have referred to intestinal autotoxemia as a possible source of renal damage, but the full extent of the relationship has perhaps never been stated. The influence of the condition of the gastro-intestinal tract upon the welfare of the kidneys is impressed upon every observer in the management of chronic nephritis. The success of the dietetic treatment of nephritis, which is recognized on all hands as the rational procedure, the importance of Dickinson's "morning purge," the effect of colonic irrigation upon renal elimination, the influence of gastro-intestinal "accidents" in aggravating the renal symptoms—these and many other facts speak for the importance of a clean digestive tract. A just appreciation of the influence which digestive disturbances exert in the etiology of nephritis has been confused by the fact that the early history of the disease has been prejudiced by a *post hoc*, rather than a *propter hoc* interpretation of the dyspepsia so often a feature of the clinical history.

The early symptoms of chronic nephritis are not infrequently equally characteristic of gastro-intestinal derangement—coated tongue, eructations, abdominal discomfort, constipation, pain in back, oxaluria and excess of indican in the urine. Excessive putrefactive and fermentative processes in the intestine produce various irritating decomposition bodies, chief of which are the members of the aromatic sulphuric acid group and the aromatic oxyacids. The liver appears to be the vestibule of all toxic and infectious agents, alimentary and digestive poisons absorbed from the bowel, and if for any reason its protective action prove inadequate, these irritating bodies gain access to the blood and are presented to the kidneys in excess. In chronic gastro-intestinal affections an increased amount of work is imposed upon the liver, with the result that the liver cells become gradually and progressively affected and eventually yield to irritation and prolonged hyperfunction, allowing the poisons that reach it from the bowel, together with the products of disturbed hepatic function, to pass on into the general circulation. Disturbances of vascular tension follow the presence of these bodies in the blood stream, and a high degree of renal irritation results from their elimination in the urine.

Chronic interstitial nephritis is of most frequent occurrence among persons leading sedentary lives and who suffer from the effects of hypernutrition. Many such subjects suffer slight disturbances of the alimentary canal without considering themselves sick, yet they are often found to be voiding urine, which, when injected into animals, proves to be decidedly toxic. A condition commonly encountered in these individuals is atony of the gastrointestinal tract, which invariably results in some degree of coprostasis with excessive putrefactive changes and the absorption of irritating toxic bodies. The question might be raised that the atony and intestinal catarrh may be due to uremic elements, which the kidneys fail to eliminate and which irritate the intestinal mucosa in the process of their removal or which act upon the nerve cells and vascular area of the stomach and bowels. Admitting the fact that indigestion of uremic origin is a frequent accompaniment of well-developed nephritis, the value of digestive autotoxemia as a prodrome and cause of the nephritis, is not lessened. The gastrointestinal condition very frequently will be found to be of ancient origin, long preceding the least suspicion of nephritis and more frequently than not, having its origin in constipation. The systemic effects of constipation are difficult to gauge, for many persons in seemingly perfect health have, throughout their lives, been the victims of marked constipation. These cases are the exception, not the rule. Fecal stasis favors the growth of organisms, never absent from the bowel, and nutrition may be seriously impaired by their turning to their own use the products of digestion and leaving only degradation products inadequate or wholly unsuited for the purpose of metabolism. Habitual constipation may, in this manner, favor a dyscrasia, which, on the one hand, in its full development, results in a "fecal anemia," and as well, in more latent obscure fashion, gives rise to cirrhotic changes in the kidneys from prolonged irritation. Poisoning of this kind is usually a very chronic and insidious process, often causing no subjective symptoms until renal inadequacy has advanced so far that the dyscrasia becomes intensified and various constitutional disturbances result. That such a cause may operate over long periods of time to the entire ignorance of the patient, is demonstrated in clinical experience by the prolonged occurrence of cylindruria and excessive elimination of aromatic nitrogenous bodies in the urine of patients seemingly healthy. Such, in a general way, is the action of autotoxemia upon the renal function. When secondary gland changes have resulted, they, in their turn, determine a retention within the economy, of large amounts of toxins, to which may be attributed as a result that group of phenomena usually included under the title uremia.

In the foregoing brief discussion of the etiology of chronic nephritis, my efforts have been confined to an attempt to extract the principle, which underlies the wealth of observation, which has accumulated about the subject. In so doing many considerations have been passed over and the conventional arrangement of the subject has been neglected. The single purpose of what has been written is to emphasize the overwhelming importance of the toxic element in the causation of all nephritis and the uniformity of action of the toxic factors, whatever special form they may assume.

THE CLASSIFICATION OF CHRONIC NEPHRITIS.*

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No serious, at least no successful, attempt has ever been made to classify cases of chronic nephritis from the standpoint of etiology. Morbid anatomists and pathologists are far from unanimous in their descriptions of the various types or groups of this disease. And physicians are not always able to make a differentiation that is satisfactory from the clinical point of view or that holds good in the light of postmortem revelations. Yet it is important that we have some working classification, even though it be somewhat faulty and largely artificial.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

The present paper, making no pretense of new suggestions in this respect, is an attempt merely to epitomize the main facts already known concerning this confusing subject.

While a historical review of the subject would be interesting and instructive, it must be omitted because of the time limit set to these papers, and it might do little more than to show us the confusion of ideas held from the time of Bright (1827) down to the present. In 1867 Rindfleisch declared that "the pathological anatomy of the kidney is certainly the subject which has stimulated the most investigation, and yet to-day it is the least complete chapter of the whole work." And Bartels,[1] a little later, besides quoting with approbation the sentence from Rindfleisch, adds that "it is apparent that the doctrine of the diffuse renal diseases can not be regarded as settled from any point of view." And Senator,[2] writing in 1896, says that "an agreement on all points concerning Bright's disease has not yet been reached."

Yet from out the confusion some semblance of order appears and there stand forth certain facts that permit of arrangement into an approach to orderly grouping. First it may be stated that the kidney of congestion is, by common consent, ruled out of the category of the nephritides and of Bright's disease. Traube made it clear that it was not an inflammation. Rokitansky, Traube, Virchow and others likewise excluded amyloid kidney, which is now rarely classed as a form of Bright's disease or as an inflammation of the kidney, though it is recognized as occurring not infrequently in connection with or as a complication of a true nephritis.

There remain two groups whose clinical features present such striking contrasts that one feels warranted in making of these groups separate classes. The justification of this seems apparent when one sees that corresponding to these two types are found kidneys differing as markedly as do the clinical manifestations.

Now it is important, of course, that the names used to designate these two different kidneys should be as accurate as possible in describing the actual pathological condition present. But it is really of greater importance that the fact of the existence of these two types should be clearly recognized, no matter what name be given. To the one form, characterized by edema and abundant albuminuria and cylindruria the name chronic parenchymatous nephritis has been most often applied; to the other, with its marked cardio-vascular changes, its relatively slight albuminuria and cylindruria, with its abundant urine of low specific gravity, etc., the term chronic interstitial nephritis is given. As synonyms for the former may be mentioned large white kidney, large yellow kidney, chronic desquamative and chronic tubal nephritis, etc.; for the latter contracted kidney, cirrhosis, sclerosis, granular atrophy, gouty kidney, etc. The former is the large, rather soft kidney, pale or darker, depending on the amount of fatty degeneration, with easily stripping capsule, wide cortex and with changes chiefly in the parenchyma, the tubular and glomerular cells. The kidney of the second class is the small, rough, firm kidney, with adherent capsule, granular cut surface, thinned cortex, retention cysts and with great increase in the connective tissue, the interstitium.

While these are types and while these types are seen with all their classical, text-book features, both at the bedside and on the autopsy table, great variations from the type are frequently met with. This has led to the naming of subclasses and varieties, tending in general toward complication rather than simplification. Now, on close examination, it is seen that the names parenchymatous and interstitial are in reality misnomers, for with every parenchymatous nephritis the interstitial tissue is also involved and parenchymatous changes are seen in every case of chronic interstitial nephritis. The process is in reality a diffuse one—a chronic diffuse nephritis. In the one case the parenchyma is chiefly, perhaps primarily, involved, and there is no induration or contraction; in the other, the interstitial structure shows the chief, perhaps the primary, change and there is contraction or induration. Hence we have Senator's two classes of (1) chronic diffuse nephritis without induration, (2) chronic diffuse nephritis with induration. But in practice the cases do not permit of such easy distribution into appropriate pigeon-holes as one might think. The pathologist often refuses to say more than that there is a chronic nephritis, and the clinical manifestations may be a mixture of the findings of the two classes. How often do we see cases with moderate edema, urine quite rich in albumin and casts, about normal as to amount and specific gravity, the cardio-vascular changes marked, perhaps also an albuminuric retinitis. Clinically it is a hybrid; postmortem it is in the mixed class. We must be content with the diagnosis of chronic nephritis or chronic diffuse nephritis. Over and over again I have seen Chiari of Prague, one of the acutest diagnosticians of gross morbid anatomy, make the diagnosis of *morbus Brightii chronicus*, refusing to attempt to classify the specimen. This point, it seems to me, deserves especial emphasis, for I am sure much energy is wasted and much needless disappointment experienced in the attempt to make a given case fit into a classification that is largely artificial and necessarily imperfect. It is better for teacher, student and practitioner to have a frank understanding on this point and to realize that disease often refuses to conform to the picture of the classical type.

This existence of the mixed forms, i. e., the failure of the disease to conform strictly to a definite type, is recognized by many writers, although many still feel urged in every case of nephritis to attempt the impossible and make a typical case out of an atypical one. Virchow, in his Cellular Pathology, speaking of his three forms of Bright's disease, says:[3] "These three varieties do not always occur as well-defined varieties, clearly distinct each from the other; it is more apt to be the case that two or even all three of these forms occur at the same time and in the same kidney." Bartels[4] says there are cases in which these forms are combined with one another in a variety of ways." Senator is explicit in his statement that one must often rest content with the diagnosis of chronic nephritis, not pretending to state the variety. Dieulafoy[5] makes three groups: 1, chronic nephritis with a large kidney; 2, chronic nephritis with a small kidney; 3, an intermediate form, which is the common form of Bright's disease. The same recognition of the mixed type is made by Welch in Flint's Practice of Medicine.

In some cases the view of Frerichs and of Reinhardt that the contracted kidney is a later form of the parenchymatous seems to be confirmed. At the bedside this transformation of a chronic parenchymatous nephritis into the chronic interstitial is occasionally seen, and postmortem a condition of secondary contraction is

1. Bartels: Ziemsenn's Encyclopedia (Translation), xv, p. 187.
2. Senator: Die Erkrankungen der Nieren. Nothnagel's System, xix., p. 154.
3. Quoted by Bartels, loc. cit., p. 182.
4. Loc. cit., p. 190.
5. Dieulafoy: Manuel de Pathologie Interne, ii, p. 26 et seq.

recognized. If we preserve the term chronic interstitial nephritis for the indurated or contracted kidney it might be well to adopt Riesman's[6] expressions, secondary interstitial nephritis for this form and primary interstitial nephritis for the slowly developing, insidious, cardio-vascular, typical contracted kidney.

As a subhead under chronic interstitial nephritis should be placed the arteriosclerotic kidney with its striking local vascular changes that are but a part of a more general arteriosclerosis. This can generally be recognized at the autopsy and can be suspected and permits of a probable diagnosis during life, particularly in the aged.

The classification, then, that seems to me the best is practically that of Senator. It is one that appeals to the clinician as well as to the morbid anatomist. The term "parenchymatous" can be used in place of "diffuse without induration," because, though not literally expressive of the true condition which is more or less diffuse, it recognizes what is true, that in this form the parenchymal changes predominate; they are quantitatively greater than in the second variety, where the process, while diffuse, produces chiefly interstitial or stromal changes with resulting induration. The classification would be as follows:

1. Chronic parenchymatous nephritis. (Chronic diffuse nephritis without induration.)
2. Chronic interstitial nephritis. (Chronic diffuse nephritis with induration.)
   - *a.* Primary chronic interstitial nephritis.
   - *b.* Secondary chronic interstitial nephritis
   - *c.* Arteriosclerotic kidney. (Arteriosclerotic interstitial nephritis.)
3. Mixed type, i. e., a combination of 1 and 2.

(The Symposium on Nephritis will be concluded by the papers of Drs. Kelly, Bishop and Riesman and the discussion.)

OPEN-AIR TREATMENT OF TUBERCULOSIS: TENT LIFE IN ARIZONA.*

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With an early diagnosis and proper treatment most cases of pulmonary tuberculosis should recover. That the disease is curable, is to-day generally recognized by medical men, and pathologists are constantly demonstrating at the postmortem table that no disease gives stronger evidence of healing tendencies than tuberculosis. Boudet of Paris recently reported 138 autopsies in which 117 revealed cicatrices of healed tuberculosis. Clinical reports from the modern open-air institutions largely confirm these statistics. The latest available information from Nordach in the Black Forest, Kimberly, South Africa, the Adirondack Cottage Sanitarium in New York, and others, show that from 20 to 35 per cent. of all cases admitted are absolutely cured as proven by the absence of bacilli, a return to good health and the resumption of the ordinary vocations of life. These clinical reports do not adequately represent the actual percentage of recoveries. By far the largest number of cases that recover are never recognized during the course of the disease and are only revealed at the autopsy. As a matter of fact from 60 to 73 per cent. of all cases of pulmonary tuberculosis recover as proven by autopsies where death has been the result of other causes.

In every case of pulmonary tuberculosis are found two conditions: one caseation with subsequent tissue destruction and more or less mixed infection; the other fibrosis, cicatrization and healing, the ultimate result in a given case depending on the resistance of the individual and the capability of the body to restrict and limit the growth of the bacilli and consequent extension of the disease. To produce and strengthen these capabilities must be the aim of all curative treatment, whether it be by specific medication or by open-air treatment.

The status of specific medication in tuberculosis is, to say the least, uncertain. It can at best be regarded as but an auxiliary to a natural hygienic and diatetic treatment. As yet there has been no indisputable evidence of benefit derived from the use of the serums or tuberculin except for diagnostic purposes. The great problem in the cure of tuberculosis is that of nutrition, and any drug that has a tendency to disturb the action of the digestive apparatus is positively contraindicated, and my personal observation leads me to believe that more damage has been done by the indiscriminate use of creosote, guaiacol, ichthyol, etc., than has benefit been derived. To my mind the open-air treatment is ideal, and the results derived from it are certainly most gratifying.

The principles which this treatment recognize as of vital importance, without which all else is useless, are comprised in the essentials to perfect animal life, viz., pure air in unlimited quantities both day and night, good food and plenty of it, and, as nearly as possible, complete repose. How and under what climatic conditions these principles may best be applied is the object of this paper.

DIAGNOSIS.

Early diagnosis is of supreme importance, and is much more frequent in the past few years than formerly, as shown by the relatively large number of incipient cases that are sent to our health resorts. There is no good reason why pulmonary tuberculosis should not be recognized in the prebacillary stage and before a cough has developed. The malaise, anorexia, gastric disturbance, evening temperature and night sweats and the reaction produced by tuberculin are as characteristic and classical of tuberculosis as is a cough accompanied by bacilli. If a case of tuberculosis is recognized within the first few weeks following the infection and placed under the best possible hygienic surroundings, in a climate where an absolute outdoor life can be followed, the chances of recovery are good. If the diagnosis is not made until a secondary infection has supervened, and night sweats, rigors, fever and profuse expectoration are pronounced, a change of climate and to the best possible conditions seldom afford much improvement. All our efforts should be made toward the early detection of the disease, as in that and that alone lies our only real success in treatment.

INSTRUCTION OF PATIENTS.

The patient should be fully acquainted with the nature of his ailment, as much for his own safety as for the protection of others. It is not possible to properly treat a patient for tuberculosis who is not fully aware of the nature and gravity of the disease. Rules made for his guidance will not be obeyed unless he knows what is the matter with him and that their violation will be invariably followed by disastrous results. Again, unless a patient understands the serious nature of his disease he will stop treatment as soon as he feels a little better, thus greatly reducing his chances of re-

6. Hektoen and Riesman: An American Text-Book of Pathology, p. 942.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

covery. No harm can come from telling a patient that he has tuberculosis and explaining to him that it means a persistent, continuous struggle for his existence for a long period of time, perhaps ranging from two to five years. He will soon recognize that his welfare depends largely on his efforts and will become a good patient, where otherwise he would be an indifferent one.

The mode of life of the patient demands unremitting attention. It is easily possible for a patient unwittingly to do himself more damage in half a day than can be repaired in a month.

Much has been said on the question of exercise for pulmonary invalids, and its value has been maintained by many of our best phthisio-therapists. Indeed, I believe 75 per cent of the tuberculous patients that come under my observation have been advised by their local physician "to get out and rough it," which is certainly the worst advice as a whole which they could receive. Detweiler, and in more recent years Brehmer, along with most of those authorities who have had extensive experience in closed institutions, condemn exercise except under the most rigid supervision and restriction. I believe that almost every so-called cold to which tuberculous patients are subject can be traced to a recent overexertion. Any exercise or exertion which produces fatigue with subsequent malaise, anorexia, elevation of temperature and general depression, is a positive and decided injury and should be prohibited. When the temperature in the evening reaches only 99½ to 100 short walks or drives may be allowed in the morning when the temperature is normal or below, but an evening temperature of 100½ or 101 is an absolute contraindication to exercise. This rule has been strictly enforced by Anderson of Colorado Springs for many years with most excellent results. Frequently patients will be met who have little or no temperature, but a marked degree of tachycardia, which is an even greater contraindication to exercise than is a temperature.

CLIMATE.

When a diagnosis has been made and the patient has been fully instructed as to the nature of his ailment, and the mode of life which he should pursue, the question of climate becomes all important. Not that any particular climate has specific action on pulmonary tuberculosis, but in what climate can he obtain the best result from an outdoor life? Where can he get the most sunshine, the most equable temperature, the least humidity and air free from bacteria.

Humidity.—In a consideration of the individual factors contributing to climatic conditions, temperature, relative humidity and amount of sunshine probably have first place. Altitude does not seem to have any particular influence on the disease, and it is questionable whether the benefit derived from a residence in a high altitude is not due primarily to other causes, notably dry air and improved hygienic surroundings. That the assimilative powers are temporarily stimulated can not be questioned, but whether the improvement is not more than balanced by the over-nervous stimulation and tachycardia produced is open to question. In the active stage of the disease a high altitude certainly is disadvantageous on account of the increased amount of work thrown on an already weak organ, and the constant irritation produced by the unnecessary expansion. The compression theory advanced by Murphy at a previous meeting of this association seems to me to be logical, and in those cases that have come under my observation where a pleurisy with effusion follows a tuberculous infection I have never aspirated the chest unless the amount of fluid was so great as to cause immediate danger from pressure. In all of these cases the tuberculous infection of the lung has been cured or arrested. A low relative humidity is apparently a very potent factor.

In northern Siberia, the plains and plateaus leading up to the Rocky Mountains in America and the great interior plateau of central Africa the disease is comparatively rare, and clinical evidence has taught that, other conditions being equal, tuberculous cases improve much more rapidly and a greater percentage of recoveries is found where the air is dryest, and by common consent it has become to be recognized as the most essential element that goes to make up the ideal climate for pulmonary tuberculosis. The lack of moisture in the atmosphere, as reported by the United States Weather Bureau, at some points in Arizona, New Mexico and the eastern part of southern California, is truly surprising. At Phoenix, and a few other places in the arid regions, it is not uncommon for relative humidity to read less than 10 per cent., as compared to 60 and 80 per cent. in the eastern and Pacific coast cities, and in June, 1901, the United States Weather Bureau at Phoenix reported the humidity as inappreciable. The annual average rainfall is correspondingly low, not generally exceeding six to eight inches.

Sunshine.—The value of a maximum amount of sunshine can hardly be overestimated, as the temperature and humidity depend to a large extent on it. The mental condition of the average tuberculous subject corresponds very closely to the barometer, and when the day is cloudy and the humidity great he is depressed and melancholy; when the sun is bright his spirits rise and he wishes to be out of doors as long as possible. The entire area comprised in Arizona, New Mexico and southern California has an unusually great amount of sunshine as compared with the eastern states. During the month of November for several years at Phoenix the average daily sunshine was more than nine hours. In 1901 there were but ten entirely cloudy days observed at several points of observation in Arizona by the United States Weather Bureau.

Temperature.—Temperature in itself is not so important except as to its bearing upon humidity and the total amount of sunshine in relation to the amount of time allowed the patient to spend out of doors. On the whole, an even high annual temperature is perhaps best for the majority of cases. The temperature of this region, and of Arizona in particular, is higher by an average of fifteen to twenty degrees in summer, and thirty to forty degrees in winter than in the north central states, yet the relative humidity is so low in summer that the sensible temperature is five to ten degrees lower; that is, the sensibility of the human body to heat is really less in Arizona than in Illinois. A temperature of 110 in Arizona is much less unpleasant than a temperature of 90 in Chicago. The annual mean temperature for the western division of Arizona for 1901 was 73.7 degrees, which is sufficiently high to allow the patient to live out of doors or in a house tent the entire year.

TENT LIFE.

The best results obtained in treating pulmonary troubles in Arizona, particularly in the region surrounding Phoenix, has been by what is practically an outdoor existence on the desert in the foot hills which extend to within six miles of Phoenix. When carried out under intelligent direction the results are in marked contrast with those cases that are so frequently seen in the board-

ing houses and hotel parlors. These cases do best when kept very quiet, and good food properly prepared is absolutely essential to improvement. The patient should have a good tent house, about 18x20 feet in size, which can be easily partitioned, making two good rooms. The tent should be boarded up about three feet from the ground and have a tight floor. A fly should be stretched over it in order to more thoroughly protect it from the rain and the direct heat of the sun. The sides should be detachable, so that they can be raised and lowered, something like awnings, to allow the best ventilation. These tent houses should be placed a few hundred yards from some ranch house where good board may be obtained, and the patient is ready for the winter as well as having the coolest possible residence for the summer. This nomadic method of living is mentally entertaining and physically refreshing. By it the digestive organs functionate to the highest degree, and the cells and tissue attain their highest reparative power.

Clinical Report.

REPORT OF A CASE OF A UNIQUE FOREIGN BODY IN THE STOMACH; GASTROTOMY; RECOVERY.*

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CINCINNATI.

Vendetta R., 10 years of age, resided in Somerset, Ky. On Nov. 17, 1901, she found a persimmon tree loaded with fruit which had just been cut down. It is supposed that she ate largely of the fruit, but no one knew positively in regard to it because she was not under observation at the time.

In the evening the patient suffered from severe gastric pain and discomfort. Ordinary home remedies were used to allay this, but as they failed to produce any effect a physician was called the next morning. In answer to his questions the patient acknowledged that she had eaten five persimmons and that she had swallowed some seeds. An emetic was administered which caused some persimmon seeds and other matter to be vomited. The emesis did not give the expected relief from pain.

An examination of her abdomen at this time revealed a hard lump in the epigastric region. Cathartics were given and the emetics were repeated, but the lump remained even though the vomiting was free and the bowels moved very well.

The patient was now sent to Cincinnati for treatment. She was first seen by Dr. J. M. Withrow, who kindly referred her to me on Dec. 5, 1901; that is, eight days after the experience at the persimmon tree. The only complaint the patient made at this time was of stomach ache. She did not suffer from nausea or vomiting. Her bowels were evacuated in a normal manner and her general appearance was excellent.

Examination of the abdomen revealed a hard mass in the epigastric region. This extended beyond the median line to the right, and under the ribs on the left side. It was not tender on manipulation. The lump would change position with the movements of the patient, but could always be felt in the epigastric region by the examiner's hand. Careful questioning failed to show that the child had been ill previous to her raid on the persimmon tree. Nevertheless, much doubt was entertained as to the nature of the tumor. It was of course possible for this lump to have been present before the persimmons were eaten, but in the absence of any history of previous illness it was reasonable to conclude that it was connected with the ingestion of the fruit.

The patient was kept under observation at the Presbyterian Hospital for four days, during which time her functions were normally performed. The only complaint she made was of pain in her stomach.

The abdomen was opened December 9 under chloroform anesthesia. When the fingers were introduced into the peritoneal sac two large masses could be distinguished, one near the median line and one far to the left side behind the ribs. These two lumps were entirely separate and distinct from each other. Further exploration demonstrated the fact that the masses were in the stomach and closely held by the walls of that viscus. The stomach was now opened and two large balls, one in the fundus and the other near the pyloric extremity, were made out. The incision in the stomach was lengthened to about two and a half inches. An attempt to break up these masses by the finger was unsuccessful, so recourse was had to a pair of curved scissors for this purpose. In this manner a mass of persimmon seeds, shells, twigs, leaves, etc., was removed piecemeal through the incision. The masses while in the stomach were globular, of a very dense black on the surface and of a lighter color in the interior. The entire mass removed weighed nine ounces.

The anterior wall of the stomach was drawn through the abdominal incision during the removal of the detritus and the peritoneal cavity shut off by sponges. The incision in the stomach was closed by interrupted Lembert sutures of silk. The organ and the abdominal wall were carefully cleansed, after which the stomach was dropped back into the abdomen. The abdominal wall was closed tightly with tier sutures. The skin was closed with a subcuticular suture of silkworm gut, which was removed December 21, twelve days after the operation. The patient returned to her home in perfect health Jan. 11, 1902.

The case possesses sufficient interest to merit its being presented at this meeting. The main difficulty lay in the diagnosis, which was only rendered clear after the stomach itself was opened.

DISCUSSION.

DR. NATHAN JACOBSON, Syracuse, N. Y.—The question of foreign bodies in the stomach and their removal is one of considerable interest. I reported a case last year in which I had operated on a child eleven years old who had formed the habit of biting off the ends of her hair. She wore the hair long and she had filled her stomach with what she had bitten off. No one had suspected that the tumor which could be felt was even a foreign body. The only manifestation she presented was that at night she was frequently seized with colicky pains. After these had persisted for several hours she would be relieved. The tumor had the shape of the kidney and was as movable as a misplaced kidney. After exposing the stomach a transverse incision was made into it. A hairy mass protruded, which after removal was found to weigh one ounce less than a pound. I have collected upward of twenty cases, one of which was reported as early as 1778 in a French journal. Very few copies of the journal containing this article can be had. An excellent drawing accompanies the article. Singularly enough, in not one of the twenty cases was the diagnosis made beforehand, one half being discovered on the operating table, and the other half postmortem. All of the cases operated on recovered. The tumors that have been found have occasionally been made up of other substances besides hair. One mass weighed over four pounds and had considerably displaced the stomach; so much so that the long diameter of the stomach was vertical. One would imagine that these conditions would only occur in the feeble-minded, but very few of them occurred in the insane. In addition to the cases referred to in my paper a case was reported to the New York State Medical Association some time ago and an additional one has been recently reported by a Canadian surgeon.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

New York and London Provision for Infectious Diseases.—London has 6500 beds for the treatment of infectious diseases, or one bed for each thousand population; New York City has only 750 such beds, or one for each 5000. London is adding 1500 beds to its present supply, and New York, through an issue of bonds, authorized this year, is adding 225 beds.

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CANCER RESEARCH AT THE MIDDLESEX HOSPITAL IN LONDON.

Scientific inquiry into cancer has been started within the last two or three years on substantial basis in our own country, in England and in Germany. Special "leagues" against cancer have been formed in France, Belgium and elsewhere. It appears that in June, 1792, the Middlesex Hospital opened a ward for the reception of patients suffering with cancer, and this cancer ward has remained a distinctive feature of the hospital from that time to the present day—a period of 110 years—during which it has afforded refuge for a vast number of sufferers.

It is pleasant to know that this worthy undertaking owes its inception in large part to a surgeon, Mr. John Howard, who by his excellent advice smoothed the way for the acceptance by the hospital, under proper conditions, of certain funds given by an at that time anonymous benefactor, whose name subsequent to his death was revealed by Howard to be Samuel Whitbread. John Howard, in a letter to "the medical gentlemen of the Middlesex Hospital," in which the ideas underlying the foundation are developed, said that two principal objects were in mind, namely, "the relief of persons suffering under this disease, and the investigation of a complaint which, although extremely common, is, both with regard to its natural history and cure, but imperfectly known." And he recommends that an airy ward be appropriated to this specific disease called cancer, and to this disease only. He quotes Lord Bacon's remark to the effect that medical men should make themselves proficient in physic by studying one disease at a time. From the observation of a large number of patients Howard hoped that new lights would appear, and that new discoveries would be made.

John Howard left but scanty writings behind him, but sufficient to show that he was cultured, liberal and imbued with a true scientific spirit that still bears useful fruit in the results of the, at that time, very unique undertaking of which he may be regarded as the originator. Recently opportunity made it possible to establish modern laboratories for the systematic scientific investigation of cancer in the Middlesex Hospital in order to fulfill better one of the main objects for which the cancer ward was founded. A. G. R. Foulerton is the director of this laboratory, which was opened March 1, 1900, and which has just issued its first volume of reports.[1] The introduction by Sidney Coupland gives an interesting historical account of the cancer charity of the hospital, and it is from its paper that the preceding statements concerning John Howard are extracted. The scientific papers proper deal with the pathogenic action of blastomycetes, the cytology of the blood in malignant disease, the statistics of 500 cases of cancer, and the bacteriological examination of cases of sarcoma and carcinoma. Henry W. P. Young gives a good résumé of the literature on pathogenic blastomycetes and describes his own observations of the actions of previously isolated as well as new yeasts or torulæ. The most important point brought out is confirmatory of the steady growing conviction that these organisms are of no import in the causation of cancer. The lesions they produce in susceptible animals are essentially inflammatory, the main bulk of the new growths often being made up of the parasites themselves. The study of the blood in malignant disease by Cecil Price-Jones appears to show that there are no specific or diagnostic characteristics. So far as it is possible at this time to construct a definite type of the cytology of the blood in malignant tumors, the most prominent feature is a gradual increase in the polymorphonuclear cells with diminution of lymphocytes. In cachectic cases the number of red cells and the hemoglobin are diminished. Poikilocytosis is marked early. Foulerton and Price-Jones conducted a careful bacteriologic examination of a number of sarcomas and carcinomas, but without obtaining anything in the nature of a constant or positive result, the results so far as they go indicating that the parasites of malignant tumors, if parasites they contain, are not visibly cultivable on ordinary media under usual conditions of bacteriologic work.

We may well congratulate the Middlesex Hospital, and more particularly its cancer investigation committee, on the renewed efforts to more fully realize the noble objects of the cancer foundation of the hospital. It may be long before decided practical results are reached from such work as this. We are reminded of John Howard's quotation from Sydenham, who says: "I have often thought that if I knew accurately the natural history of any disease, I should never be at a loss for a proper method of treating it."

LEPROSY IN THE UNITED STATES.

It is only a short time since the Marine-Hospital Service authorities reported that there were 278 lepers in the United States, this presumably being the total number among us, the majority being credited to Louisiana and Minnesota, where the disease has long been known to exist. Dr. A. S. Ashmead[2] disputes these figures and gives details of omissions in his own personal knowledge. Thus, instead of seven cases only in the State of New York he claims to know of sixteen

1. Reports from the Cancer Research Laboratories: The Middlesex Hospital, London, 1902.
2. In a communication to the Pacific Medical Journal, September, 1902.

in New York City alone, in Michigan where none were reported he has knowledge of three cases, and more or less similar facts in other states. Oregon did not report 100 lepers who are on record in Japanese immigration statistics as having gone there, and the *New Orleans Picayune* gives 400 as residing in Louisiana, where the government figures allow only 155. Other specialists, he says, have knowledge of additional cases to those known by him, and the majority of leper specialists failed, he alleges, to give the private memoranda of their cases to the government inquirers. From all the facts he deduces that the number of lepers in the country must be much larger than is commonly supposed, and that they constitute a real peril, endangering us with the possibility of a more general spread of the disease among our population. His advocacy of a national leper law is well known, requiring registration and isolation under the control of a special government commission or commissioner, and he offers these facts in support of his plan.

It may be that our statistics of leprosy are very defective; we are very ready to admit that this is the case on the evidence adduced. It is quite possible that there may be several hundred more lepers in the United States than were found by the Marine-Hospital officials and that the number is increasing. There is every probability that cases have always existed among us, possibly even in larger proportion to the general population at some former times than at present. Of course, it has gone undiagnosed, as, according to Dr. Ashmead, it does at present to a considerable extent. Just now with our increased emigration from the Levant and our generally enlarged tropical relations it is not at all surprising if we have a larger number than ever before. The encouraging fact is that there appears to be practically no indigenous leprosy except in Louisiana and possibly one or two other places on our extreme southern border. All the cases reported in our large cities are exotics, and there is little evidence anywhere that they propogate the disease. Of course, with their greater number we have to consider the possibility of contagion, and there may have been exceptional instances of the disease occurring in persons who have never lived or traveled out of the country, but so far these are so rare as to be practically negligible. In Minnesota the introduced disease appears to die out with the changed modes of living and surroundings. So far as the data are obtainable it does not seem warrantable to assume that leprosy is a imminent national peril.

Nevertheless, it is well worth while to neglect no reasonable means of keeping out the disgusting and incurable disorder. Dr. Ashmead makes the wise suggestion that we should include in our treaties with foreign countries a provision requiring them to give to our consuls abroad their record of emigrating lepers and leper relatives as well as to otherwise refrain from unloading on us this undesirable class, as he hints is being systematically done. The time will come when we will have to look more carefully into the immigration problem, and it is well to begin on such obvious abuses as this if it exists. It is a subject well worthy the earnest and early attention of the new Public Health Service reorganized from the Marine-Hospital Service of the past, and there is no reason to think that it will neglect this important matter that comes under its supervision.

DIPHTHERIA AS A COMPLICATION OF SCARLET FEVER.

It is not always an easy matter to distinguish the sore throat of scarlet fever from that of diphtheria, and it is only since the discovery of the diphtheria bacillus that it has become possible to make this differentiation with absolute certainty. The difficulty of the situation is not a little increased by the fact that occasionally the two diseases are associated in the same person. At times, under such circumstances, bacteriologic examination has disclosed the presence of bacilli morphologically, tinctorially and culturally corresponding with diphtheria bacilli, but hitherto their identity has not been unequivocally established by inoculation experiments.

A study along these lines has been undertaken by Dr. J. A. Schabad,[1] who finds as a result of his observations that diphtheria is observed as a complication of scarlet fever, not only during convalescence from the latter disease, but also at its height, and even at its beginning. In order to make a diagnosis of a combination of the two diseases at the beginning of the attack coincidence between the clinical symptoms and the results of bacteriologic examination is necessary; that is, both the clinical symptoms of diphtheria and the diphtheria bacilli must be present. While in cases of diphtheria occurring during convalescence from scarlet fever and in cases developing at the height of the attack the diphtheria bacilli cultivated from the pharynx exhibit normal virulence toward guinea-pigs, they prove little if at all virulent when obtained at the beginning of an attack of scarlet fever, although they exhibit all of the physical characters of true diphtheria bacilli. This want of virulence in diphtheria bacilli obtained at the beginning of an attack of scarlet fever does not preclude their participation in the pathologic process, that is, the combination of scarlet fever and diphtheria.

In addition to cases of combined scarlet fever and diphtheria, diphtheria bacilli may at times be found at the beginning of an attack of scarlet fever, although clinical symptoms of diphtheric angina may not be evident. In view of the milder course and the more favorable termination of such cases, as compared with cases of combined scarlet fever and diphtheria, it appears probable that in these cases the diphtheria bacilli play the part of saprophytes without taking part in the pathologic process. In order to prevent the spread of diphtheria among scarlet fever patients and convalescents in the hospital wards for scarlet fever it is necessary

1. Archiv für Kinderheilkunde, 34. B., 3, 4. H., p. 161.

for the new patients with diphtheria bacilli in the pharynx to be isolated from the remainder. In order to effect this end the pharynx should be at once examined bacteriologically in all cases, or at least in all in which membrane is present. All cases of combined scarlet fever and diphtheria, as well as cases in which diphtheria occurs as a complication of scarlet fever at the height of the disease or during convalescence, should be treated with antitoxin.

THE HANDICAP OF CLOTHING.

It was a distinguished English novelist who remarked that clothes were a very small matter to a man; he could get along without them if the conventionalities and climate permitted, but they are everything to a woman. This sociologic and psychologic fact apparently has its bearings on the fitness of woman to practice medicine, at least according to British experience. According to a transatlantic contemporary, the British woman who is a physician has been found to be seriously handicapped by the numerous solemn rites she has to go through before she can permit herself to appear in public, and the time thus consumed appears unduly long to those who urgently want her services. This matter has even been the subject of official attention over there, for we read of what was at least an implied censure by a coroner's jury of a board of infirmary guardians for not having a male physician on hand to receive emergency cases. We are more patient and long suffering on this side of the Atlantic or our American women are more expeditious, for such complaints have not so far come to our knowledge. There may be something in the unstimulating atmosphere of the British Isles that causes undue delays in the necessary prinking that a lady must go through even to meet only accident victims and ambulance drivers. Our British lady confrères—or perhaps we should say consoeurs—will, of course, rise to the occasion in some way and be a little more strenuous in toilet expedition.

MEDICAL SOCIALISM.

According to a recent issue of the *Journal de Paris* the physicians in Holland are agitating for a sort of state endowment of the profession. The plan is to add 1 or 2 per cent. to the income tax on all having a yearly income of 500 florins or more, the proceeds of which will be devoted to the support of the state health functionaries, who would thus be freed from all cares of business and be able to devote their whole time to the welfare of their patients and their advancement in professional knowledge. All medical treatment would be free, but only the rich or relatively well to do would have to contribute to the tax. There would be, according to this plan, one physician to each 2,000 of the general population, or about 2,500 in all for the 500,000 inhabitants of the Netherlands. This plan has a specious appearance, but it would be interesting to see how it would work in practice. What would the high-priced specialist do, for it would almost necessarily imply that no state authorized doctors should charge a fee. How would the government manage the interlopers and quacks who would undoubtedly endeavor to continue to exist? How about consultants from without or those foreigners who might desire the services as consultants of Dutch physicians? These and a host of other questions suggest themselves if this interesting experiment in state socialism is to be made. We have, however, some little doubt as to the imminent danger of its being practically realized in the near future.

UNFAIR TESTS.

It is a pity that a good law should ever be enforced in such a way as to do injustice, but that sometimes happens. Apparently a case of this kind is made against the California State Examining Board by the *Pacific Medical Journal*. It criticises especially the questions on pathology, taking exceptions to those asking a definition of cryoscopy and for the characteristic lesions of Hanot's cirrhosis. Neither of these questions is exactly fair as testing a practitioner's qualifications. Cryoscopy is a word not found in quite recent medical literature, and Hanot's cirrhosis is a name only occasionally applied to hypertrophic cirrhosis of the liver. In neither case could it be fairly expected that any but one constantly posted in the most recent periodical literature would be able readily to answer these questions, and any one rejected for failure to do so would justly have a grievance. If, as our contemporary claims, some were rejected for such failure the decision ought to be revised. If, moreover, all failed on these particular questions except a few special students of one school, as our contemporary says was the case, it has a worse appearance. It is unfortunate that the examination is open to this particular criticism, as, from the published questions, in all other respects it seemed to have been eminently fair. Such unfortunate occurrences furnish weapons for those who would abolish state practice acts and go back to the evils that have existed. Our medical examining boards ought to have a specially critical eye on themselves and forestall all such possibilities.

THE ASEPTIC BARBER SHOP.

The dangers of the barber shop, while perhaps not as serious as they might be, are still uncomfortable subjects for reflection, and whatever will insure against them ought to be welcomed by the patronizing public. In Missouri they have a State Board of Examiners for barbers, with authority to make rules for their guidance that shall be imperative. The board has just issued a very elaborate set of regulations for barber shops, which if enforced would rob shaving of its terrors to those initiated into its pathologic possibilities. The shops must be scrubbed with hot water and lye every night; the razors, clippers and scissors dipped in a 10 per cent. solution of formaldehyd after each use and the hands cleansed; brushes and combs, towels, etc., must be sterilized and cleansed before use; sponges and powder puffs are forbidden, and special disinfection is ordered after operating on any person who has a facial or scalp eruption. In short, the Missouri barbers must hereafter be aseptic in every sense or the state board will be after them. There is a suggestion of something of antiquity in thus placing the barbers under a like control to that of the practice of medicine, but the idea is thoroughly in accordance with modern hygienic

theories. The barbers may object and some of them require a little disciplinary treatment before the salutary measures prescribed are made effectual in all quarters, but the public will endorse the rules. It is not pleasant to think of the chance of getting whatever it may be that goes under the name of barber's itch, but there are still worse things that might be conveyed. If Missouri enforces her regulations, which is perhaps doubtful, other states will soon be following her example in response to public demand.

THE RADIUM RAYS IN THERAPEUTICS.

In a recent issue of THE JOURNAL (September 20) was published an abstract of a communication by Danlos[1] on the effects of radium in the cure of lupus. The results reported are certainly striking enough, and it would appear that we have in this substance a therapeutic agent of considerable promise. Its advantages over the tedious and expensive light treatment when it is practicable are obvious; the radium can be applied directly to the diseased area without inconveniencing the patient or requiring the continuous attention of the operator, and while radium is a rare and expensive substance it would seem probable that the general cost of the treatment can be greatly reduced. A possible inconvenience of the treatment is that the radium application may cause obstinate ulcers, as shown by a case reported by Hallopeau and Gadaud in the same journal, but this can probably be avoided by proper technic and care. It is suggestive, moreover, of the close relationship of the radium radiations and the *x*-ray, and of a possible like utility in malignant disease. It is probably this same destructive action of the *x*-rays that is the cause of their effectiveness in cancer; they exercise it more quickly on the imperfect cancer cells than on those of the normal tissues. The advantages of radium for such treatment, if it should be found as effective, are obvious. The local application can be made directly on the spot and in some cases of internal or quasi-internal cancer, such as that of the cervix uteri, it would seem that it might be specially valuable. It is possible, moreover, that combined with surgery, or as an after-treatment, the radium rays may be found equivalent to the *x*-ray, and probably experiments are already being made in this direction, and before long we shall hear of their results. So far there is no reason to believe that they will not be attended with a fair amount of success, which will be an important addition to our therapeutic resources in a hitherto almost hopeless class of disorders.

Medical News.

CALIFORNIA.

Plague in San Francisco.—Ten cases, all fatal, were reported during August, according to the report of the Public Health and Marine-Hospital Service. Two of these were of the pneumonic variety.

Pacific Hospital Opened.—The Pacific Hospital, Los Angeles, was opened to the public, September 9. It is elaborately equipped and has 75 private rooms for patients, and is exclusively for surgical cases.

August Deaths.—The deaths in San Francisco during August numbered 597, equivalent to an annual death rate of 19.87 per 1000. In August, 1901, there were 478 deaths, a death rate of 15.92 per 1000 per annum. Tuberculosis caused 76 deaths, diseases of brain 43, diseases of heart 65, cancer 34, digestive diseases 28, pneumonia 26, and Bright's disease 21.

Jewish Hospital Opened.—The Kaspare Cohn Hospital, Los Angeles, was dedicated with appropriate ceremonies, September 21. Kaspare Cohn presented the hospital to the Hebrews of Los Angeles. The gift was formally accepted by Rabbi Hecht, and Dr. Philip Newmark, who is to have direct charge of the hospital, made a short address, in which he outlined the plans for the conduct of the institution.

Personal.—Dr. James H. McBride, Pasadena, has been elected dean of the medical department of the University of Southern California, Los Angeles.——Dr. Ida M. Lathrop, San Francisco, has been committed to the Mendocino State Hospital, Ukiah, for treatment.——Dr. F. W. Ross, after an absence of three years in the service of the North American Commercial Company as physician on the island of St. Paul, Bering Sea, Alaska, has returned to San Jose.

ILLINOIS.

Chicago.

St. Luke's Society in More Trouble.—Judgment has been entered against "Dr." O. E. Miller and the St. Luke Society for $1250 unpaid rent.

Personal.—Dr. E. Wyllys Andrews struck his head while diving at a natatorium in Chicago and was severely bruised. The injury necessitated his stay in a hospital for several days. ——Dr. Max A. Weisskoff and wife have returned from their western tour.

Eminent Irish Surgeon in Chicago.—Mr. Charles B. Ball, professor of surgery in Trinity Medical College, Dublin, who recently delivered the Lane lectures at the Cooper Medical College of California, arrived in Chicago, September 25, and was entertained by Drs. John B. Murphy, William A. Evans, and J. Rawson Pennington. In the evening, by invitation, he showed some beautiful colored slides of diseases of the rectum in the rooms of the Chicago Medical Society.

Deaths of the Week.—The 446 deaths reported for the week ended September 27 furnish an unusually low mortality rate for September. On the basis of 1,820,000 population the annual rate is only 12.73 per 1000, while for the corresponding week of the most healthful year on record (1901) the annual rate was 14.41 per 1000, or more than 11 per cent. greater. The increase of diphtheria and scarlet fever cases, however, is fully 40 per cent. over the previous week, and their mortality is nearly 88 per cent. greater than in the corresponding week of last year.

The Typhoid Situation.—There were 25 typhoid deaths reported during the week, this number being 13 fewer than that of the previous week and 22 fewer than the average weekly number since August 1. Reports from the 15 principal hospitals of the city show a decrease in the number of cases under treatment and of new cases admitted, of about 15 per cent. as compared with the previous week. Up to noon, September 27, 646 cases had been admitted to the County Hospital since July 1; of this number 69 died, 313 were discharged recovered, and 264 remained under treatment. The death rate, 18 per cent. of the completed cases, is higher than had been anticipated during the earlier weeks of the epidemic. The Department of Health believes that the highest figures have been reached and that the disease may no longer be regarded as epidemic.

INDIANA.

Medical College Opens.—The Medical College of Indiana, Indianapolis, opened, September 24, with the largest enrolment in its history. Addresses were made by the dean, Dr. Henry Jameson, and by the vice-dean, Dr. Alembert W. Brayton.

Indiana Denies Ames License.—The State Board of Medical Registration and Examination is reported to have refused to grant Dr. Albert A. Ames, late mayor of Minneapolis, a temporary license to practice on the ground that he appears to be a fugitive from justice.

August Morbidity.—Smallpox for the nineteenth consecutive month was the most prevalent disease. Typhoid fever was second in prevalence. All but six of the 92 counties reported typhoid fever present, and the 167 deaths were reported from 65 counties; 245 cases of smallpox were present in 30 counties. In July 502 cases were reported in 46 counties, with 15 deaths.

August Mortality.—The Monthly Bulletin of the State Board of Health reports 3158 deaths, a rate of 14.8 per 1000

1. Ann. de Dermatologie et de Syphilis, July.

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per annum. In the same month last year the deaths numbered 2932, a rate of 13.7. Of the total, 23.4 per cent. were under 1 year of age and 22.9 per cent. were 65 and over. Important causes of death were as follows: Tuberculosis 313, typhoid fever 167, diphtheria 20, scarlet fever 7, measles 5, whooping cough 20, pneumonia 69, diarrheal diseases 550, cerebrospinal meningitis 5, influenza 2, cancer 104, violence 129, and smallpox 2.

MARYLAND.

True Bill for Manslaughter.—The grand jury of Baltimore County found a true bill against Dr. George Hodges for manslaughter.

Personal.—Dr. G. Pickrell, surgeon U. S. Navy, has been ordered to the Naval Academy, Annapolis, for duty. Dr. James A. Bond, Westminster, has sailed for London, England, where he will take a special course in medicine.——Dr. A. C. Taylor, Ellicott City, will spend the winter in Colorado.

Vaccine Physicians Appointed.—The following have been appointed vaccine physicians of Carroll County: Drs. Charles W. Weaver, David E. Hoff, J. J. Stewart, Samuel L. Moores, S. M. Sprechen, J. H. Sherman, Charles R. Foutz, R. F. Richards, C. H. Diller, Geo. H. Brown, J. H. Watts, Wm. Gaver and E. D. Cronk.

Baltimore.

Hospital Opened.—The Hospital for the Women of Maryland opened for the season September 17.

Deaths and Disease of the Week.—There were 173 deaths last week, 15 being from typhoid fever and 12 from cancer. The Health Department reports 51 new cases of typhoid fever, 19 of diphtheria, 12 of scarlet fever, and 1 of smallpox.

Filtration Plant Discussed.—The question of a filtration plant for the city to get rid of typhoid fever germs was discussed last week by the Municipal Improvement League. The water engineer estimates the cost, with pumping station, purchase of land, conduits and accessories at $2,000,000. The expense of operating the plant would be $2.50 per 1,000,000 gallons.

Colleges Open.—The Woman's Medical College opened October 1 with an address by Dr. Charlotte Murdoch, Instructor in pathology.——The Baltimore Medical College opened September 25 with an address by Prof. J. M. H. Rowland.——The University of Maryland opened October 1.——The College of Physicians and Surgeons opened its thirty-first session, September 30, with an introductory address by Prof. I. R. Trimble, who devoted himself principally to the history of anatomic instruction in the school with sketches of the leading anatomists and surgeons from 1827 to 1902.

Heating Hospitals.—The question of the coal supply for the hospitals is most serious. Inquiry has shown that of 21 hospitals only one, the Marine Hospital, has a good supply, and seven refused to give an estimate of the amount on hand. Three of the largest hospitals are absolutely without any hard coal, and only one of these has a little coke and soft coal on hand. No hard coal is to be obtained, and soft coal and wood are held at high prices. In this emergency the Philadelphia and Reading Railroad offers 1000 tons of hard coal which was stored at Locust Point before the strike and was held for an emergency. It is said that this will be sufficient for all needs and will be sold at moderate prices.

Personal.—Dr. T. Caspar Gilchrist has returned from Europe.——Dr. Henry M. Hurd has returned and resumed his duties as superintendent at the Johns Hopkins Hospital.——Dr. Frederic Taylor, who is connected with the press of this city, has moved to New York.——Dr. D. C. Gilman, president emeritus of Johns Hopkins University and president of Carnegie Institute, returned, September 25, after an absence of several months in Europe.——Dr. Charles M. Ellis of Elkton is convalescing from his late illness at Atlantic City.——Dr. George Walker has returned from Europe.——Dr. Frederick Caruthers has resigned his position as Health Warden as his duties as a member of the faculty of the Maryland Medical College demand all his time.

MICHIGAN.

Medical Colleges Begin Work.—The Grand Rapids Medical College opened for the session of 1902-1903, October 1, with a large increase in attendance.——The seventh annual session of the Saginaw Valley Medical College opened September 22.

Personal.—Dr. and Mrs. Charles E. Tompkins, St. Joseph, started for their new field of labor in Sni-Fu, China, September 16.——Dr. Frederick T. Wright, Calumet, has resigned from the staff of the Calumet and Hecla Hospital and has taken charge of the medical work at the Calumet and Arizona smelters at Douglas, Ariz.

Disease in Michigan.—Reports to the State Board of Health from representative physicians indicate that rheumatism, diarrhea, neuralgia, bronchitis and tonsillitis, in the order named, caused most illness in Michigan during the past week. Meningitis was reported present at four places, whooping cough at 13, measles at 23, diphtheria at 23, smallpox at 26, scarlet fever at 38, typhoid fever at 75, and consumption at 222.

Mortality of Michigan During August.—There were 2466 deaths reported to the Department of State for August. The death rate was 11.8 per 1000 per year, as compared with 11.3 for July, 1902, and 12.2 for August, 1901. There were 585 deaths of infants under 1 year of age; 191 deaths of children from 1 to 4 years, and 630 deaths of persons over 65. Important causes of death were as follows: Tuberculosis, 178; typhoid fever, 45; diphtheria and croup, 33; scarlet fever, 12; measles, 8; whooping cough, 27; pneumonia, 88; diarrheal diseases, under 2 years of age, 325; cancer, 124; accidents and violence, 173. There were 3 deaths from smallpox, and one death was reported from lightning.

NEW YORK.

Buffalo Personals.—Dr. William H. Mansperger has been appointed chief surgeon of the Erie Railroad, with headquarters in Buffalo.——Dr. James Mooney has returned from the eastern coast of Maine and the White Mountains.——Dr. and Mrs. Arthur W. Hurd spent some time recently at Banff Springs in the Canadian Rockies.

The College Year Opens.—Albany Medical College held exercises introductory to its seventy-second annual session, September 3. The president of Union University and Dr. Joseph D. Craig, addressed the new class.——Dr. Lucien Howe delivered the address at the opening of the regular session of the University of Buffalo Medical Department.

Skin Disease at Jamestown.—A skin disease is prevalent in the Jamestown, N. Y., public schools. The eruption of the skin resembles closely a mild form of smallpox, but the patients have no constitutional symptoms. In one school one half the pupils have been attacked by the disease. Great alarm was occasioned by the first cases that were reported, but as the patients are recovering without any ill-effects the impression is becoming general the disease is not of the varioloid type, but psoriasis or a form of tinea.

Hospital Benefactions.—Mrs. Emma F. Taylor, daughter of the late governor, Roswell P. Flower, has notified the president of the board of trustees of the City Hospital, Watertown, that she will defray all the expenses incident to the erection of a new building on the hospital premises for the care of patients suffering with contagious diseases other than smallpox.——Dr. Joseph Brewer of New York, who formerly lived in Cortland, when he died left a bequest of land in South Dakota to the Cortland Hospital. The land has now been sold, and with the proceeds the Hospital Association has been able to pay off its mortgage and has a balance of $700 at interest.

New York City.

Coroner's Physician.—The Supreme Court has decided that Dr. Otto H. Schultze is the rightful successor to the coroner's physician, Dr. Hamilton Williams, who resigned some months ago.

St. Mary's Hospital Staff.—The medical staff of the new hospital in Jamaica, Queen's Borough, which is to be known as St. Mary's Hospital, has organized, with the following officers: President, Dr. Philip M. Wood; vice-president, Dr. George K. Meynen, and secretary, Dr. Austin J. Blanchard; surgical division, Drs. Philip M. Wood, George K. Meynen, Austin J. Blanchard and Timothy J. Flynn; medical division, Drs. Henri M. Augur, Samuel D. Nutt, William T. Scovil and Edwin T. Jones; sanitary department, Dr. Samuel Hendrickson.

New Convalescent Hospital.—While it has not yet been officially announced that a site has been selected for the large hospital for convalescents to be erected through the munificence of John M. Burke, the fact that the trustees have requested the board of aldermen to postpone the opening of certain streets through Mr. Burke's extensive property along the Boston road, Borough of the Bronx, makes it probable that this will be the site of the new institution. There is urgent need for such a charity, and the public takes a personal interest in the expenditure of this fund of four million dollars.

Maniac and Ambulance Surgeon.—Dr. J. A. Link, an ambulance surgeon of Bellevue Hospital, took in an ambulance from a police station the other evening a man who had been found acting strangely in the street. After they had gone a short distance the patient arose and approached the surgeon, saying he wanted to speak to him confidentially. In an instant he had seized Dr. Link by the throat, and then followed a fierce struggle, which necessitated stopping the ambulance and calling in the driver and a passing citizen to the rescue. Dr. Link's clothes were torn, his face and hands cut and there were deep finger marks on his throat.

Typhoid Fever in Brooklyn.—There have been 143 cases of typhoid fever reported this month in the Borough of Brooklyn and 34 deaths, whereas in the same month last year only 72 cases were reported. Dr. Fred L. Jewett, in charge of the bureau of contagious diseases of the health department for that borough, takes the rather remarkable view that this prevalence of typhoid is largely attributable to contamination of the water supply by typhoid germs from old Camp Black, which was an infected spot in 1898. He says that in this region the water supply comes largely from driven wells, and that most of the cases of typhoid at present are in the older wards, or those supplied from water coming from the regular drainage of Long Island.

Sick Immigrants and the City.—Health Commissioner Lederle has notified Commissioner Williams, of the Immigration Bureau, that the city will not continue to care for immigrants suffering from contagious diseases. This step is taken because the city is lacking in accommodation for its own citizens ill with contagious diseases, and the transportation of the immigrants is an additional source of infection. Because of the danger to other patients, it has been necessary to keep all the patients in hospital 15 or 20 days longer than otherwise necessary simply for observation. It is understood that a reasonable time will be given the immigration authorities to provide a hospital for this class of immigrants.

PENNSYLVANIA.

Lancaster General Hospital.—Work has begun on the Lancaster General Hospital. The building is to have 200 feet frontage, will be 3 stories high, and is expected to cost $50,000.

State Hospital Overcrowded.—The Norristown State Hospital for the Insane has 2127 inmates. The institution is so overcrowded that many have to sleep in hallways on mattresses laid on the floor.

Bequests.—Jacob Kritser left a bequest of $5000 to the Presbyterian Hospital for the maintenance of a free bed in the name of his deceased wife.——By the will of James Carlisle more than $4000 is bequeathed to the Presbyterian Hospital.

Personal.—Dr. Ernest La Place, professor of surgery and clinical surgery in the Medico-Chirurgical College and Hospital, recently returned from Europe. While abroad, in recognition of his scientific and medical researches, the French government honored him with a decoration.

University Opening.—On the opening day of the 163d year of the University of Pennsylvania, September 26, announcement was made of the appointment of Dr. Charles H. Frazier as the new dean of the medical department. Dr. Frazier succeeds Dr. John Marshall, who recently resigned.

Changes in Pension Referees.—Dr. Jacob F. Raub, a native of Pennsylvania, who has been for many years chief medical referee of the Pension Office in Washington, has been replaced by Dr. Sam Houston, also a native of Pennsylvania. This is the result of persistent attacks against Dr. Raub by the G. A. R.

Reverend Physician Exonerated.—In the case of the Rev. B. H. Miller, M.D., of Mohnsville, Berks County, who was charged with the illegal practice of medicine, the grand jury, at Reading, after examining twenty witnesses, found that the doctor was practicing under a license, and that there was no ground for prosecution.

TENNESSEE.

Personal.—Dr. Rufus E. Fort, Nashville, has been appointed surgeon-in-chief of the Tennessee Central Railroad, with headquarters in Nashville.

Infirmary for Colored People.—A special infirmary for colored people of Nashville, established by Dr. John T. Wilson, was formally opened September 26.

Tennessee Medical College, Knoxville, opened for its annual session October 1. The only important faculty change is in the anatomic department, where Drs. Walter S. Nash and Albert B. Peck replace Dr. Henry J. Kelso, resigned.

Typhoid Spreading in Nashville.—Typhoid fever is increasing rapidly in Nashville. August shows a record of 67 cases, against 27 for the corresponding period of 1901. Up to the present time last year the record of typhoid fever patients for the city was 72. This year the total number of cases developed has been 167, or more than twice as many.

GENERAL.

The X-Ray for Leprosy.—The success of *x*-ray therapy in certain skin diseases has led to its use in leprosy. The result of the trial in Hawaii will be awaited with much interest.

Disease Not Unusually Prevalent.—Surgeon-General Wyman, in view of the epidemics in various parts of the world, said in a recent interview: "I do not believe that there is more disease this year than usual. The difference is that in these days of rapid transmission of news we hear more of the ills of our distant neighbors than formerly, which makes it appear that the world is in the grasp of pestilence. We now hear almost instantly of an outbreak of a scourge where formerly all would be silence."

Racial Susceptibility to Cholera.—The *Manila American* says of the cholera scourge in the Philippines: "The provinces have suffered much more heavily, considering the proportion of the infected districts only, than has the city of Manila, although there is every reason why the disease should be more severe in a crowded metropolis than in districts less thickly populated. While the fatalities among the Filipinos were above 80 per cent. and among the Americans above 60 per cent., the Chinese have suffered less than 40 per cent. deaths. Perhaps it would be a good thing to study John's mode of life." The per cent. of deaths from all cases has been about 73.5. Between July 10 and August 12 the deaths among soldiers of the Army numbered 35, of which number 6 were natives and 29 Americans.

The report of Surgeon-General W. H. Forwood, of the Army, for the year ending June 30, 1902, contains much interesting data. We note the following:

Disbursed during the year:	
Expenses of medical supply depots	$ 493.02
Medical supplies	286,804.37
Medical attendance and medicines	11,240.50
Medical expenses of recruiting	48,875.64
Pay of nurses	3,975.95
Pay of other employes	122,170.48
Washing of hospital linen	40,960.43
Expressage and notary fees	221.50
Total	$514,741.89

Artificial Limbs.—There were furnished during the year, 39 artificial legs, 1 arm and 1 foot. Commutation certificates were issued for 133 cases of amputated leg, 79 of amputated arm, 12 of amputated foot and for 2029 cases of the loss of the use of a limb. These cases involve an expenditure of $116,185.

Trusses.—The number of trusses issued and fitted during the year was 911, at a cost of $7,016.66.

Hospital Construction and Repair.—During the past fiscal year modern hospitals were completed at Fort Robinson, Neb., Fort Mason, Cal., Fort Getty, S. C., and Fort Leavenworth, Kan. The hospital at the latter post was paid for from a special appropriation of $60,000, authorized by Congress, and is equipped with all modern appliances, thus forming a general model for large military posts.

Army Medical Museum.—There were 34,988 specimens in the museum on June 30, 1901; 606 specimens were added during the past fiscal year, but as 78 specimens were discarded, returned to contributors, etc., there remained 35,516 specimens June 30, 1902.

Library of the Surgeon-General's Office.—At the end of the fiscal year the library contained 144,800 volumes and 245,001 medical theses and pamphlets. There were presented to the library during the year 636 books and 9,542 pamphlets and journals.

Medical Officers, United States Army.—The number of medical officers allowed by the act approved Feb. 2, 1901, is 321. The number in service on June 30, 1901, was 272, leaving on that date 49 vacancies to be filled.

Of 192 candidates examined by the Army medical boards, 55 were rejected as disqualified physically, 97 withdrew in the progress of the examination or were rejected on its conclusion, and 40 were approved and recommended for appointment.

Medical Officers, Volunteers.—The act of Feb. 2, 1901, reorganizing the Army, authorized the appointment of 50 surgeons of volunteers with the rank of major and of 150 assistant surgeons of volunteers with the rank of captain, all for service in the Division of the Philippines. On June 30, 1901, the full complement authorized by law was in commission. During the year ended June 30, 1902, 9 majors, surgeons, were discharged from the service, 1 died and 1 was killed in action, making a loss of 11 majors, surgeons, which was repaired by the appointment of 2 majors, surgeons, and the promotion of 9 captains, assistant-surgeons. The loss among the captains, assistant-surgeons, during the year consisted of 22 discharged from service, 1 died and 9 promoted, making a total of 32 replaced by new appointments, leaving in service June 30, 1902, the full complement of 50 majors, surgeons, and 150 captains, assistant-surgeons, allowed by law.

Contract Surgeons, United States Army.—There were in service June 30, 1901, 387 contract surgeons. During the year ended June 30, 1902, contracts were made with 60 physicians, 172 contracts were annulled, and 2 terminated by death, leaving 273 under contract. No contracts are now being made, and a gradual reduction in the number of these surgeons is being effected by natural causes.

Ratio of Men Enlisted to Men Examined.—The total number of men examined for enlistment during the year 1901 was 58,782, of whom 36,721, or 624.70 out of every 1000 examined were accepted.

Health of the Army.—The rates of admission to sick report for disease and injury, the rate of discharge for disability and the mortality rate for the calendar year 1901, all agree in being considerably less than the corresponding rates of the year 1900. This shows the gradual improvement in the condition of the troops, notwithstanding the fact that many of them were subject to the exposures of tropical service in the Division of the Philippines. The character of service in the different parts of the archipelago has varied more during the year than in any similar period since American occupation. Although a great deal of hard field service has been done and much new country occupied, there has been a decrease in sick and mortality rates, for improved conditions in peaceful provinces have more than counterbalanced any local increase caused by arduous field service. Campaigns carried on during the year have not, however, been less trying to the stamina of troops than former ones, rather the reverse, as most of the more accessible points were already occupied by our forces at the beginning of the year and the necessity for following insurgents, hiding in the fastnesses of inaccessible mountains, added much to labors performed in the sweltering heat of the tropics.

Prevalence of Special Diseases.—The following summary is made from the statistics given of the cases, deaths, and the proportion to the total number of men, concerning certain diseases: Scarlet fever: 14 cases, none fatal. Measles: 769 cases, 12 deaths. Mumps: 1382 cases, none fatal. Smallpox: 125 cases, or 1.35 per 1000; 37 cases were fatal. No case of smallpox was reported from either Cuba or Porto Rico. Yellow fever: 14 cases, 1 fatal. All these occurred in Cuba prior to the precautionary measures taken after the discovery made by Major Reed concerning the part played by the mosquito in the propagation of the disease. Typhoid fever: 594 cases, or 6.42 per 1000, and 78 deaths, or .84 per 1000. There was probably more typhoid than this, since 1805 cases of fever, equivalent to 19.52 per 1000, were reported as undetermined. None of these were fatal. Malaria: 35,180 cases, or 380.37 per 1000. Consumption: 452 cases, or 4.89 per 1000, and deaths 1.03 per 1000. Rheumatic fever: 366 cases, or 3.96 per 1000, with 1 death. Intestinal diseases: 28,918 cases, or 312.69 per 1000, and 3.64 deaths. Venereal disease: 13,911 cases, or 150.41 per 1000, and 8 deaths, or .08 per 1000. There were 161 discharged for disability, or 1.76 per 1000. Alcoholism: 2,018 cases, or 21.82 per 1000, and 26 deaths, or .28 per 1000. Insanity: 166 cases, or 1.76 per 1000. Of these 142, or 1.53 per 1000, were ultimately discharged as insane. Injuries: 17,736 cases, or 191.77 per 1000. Gunshot injuries: 104 men killed, only 46 of them met death in action; 14 deaths were accidental, 33 suicidal and 11 homicidal. Beside those killed, 475 cases of gunshot injury, or 5.14 per 1000, were treated in the hospital. Of these, .53 per 1000 were discharged for disability, and .48 died, leaving 4.13 recoveries per thousand.

CANADA.

Personal.—Dr. W. Russell Thomas, Lennoxville, Que., has gone to Bermuda. He will be the surgeon in charge of the Boer prisoners on their way back to South Africa.

Appointment.—Dr. Edmund M. von Eberts, formerly medical superintendent of the Montreal General Hospital, has been appointed Registrar of the Medical Faculty of McGill University, to succeed Dr. Ruttan, who takes the chair of chemistry.

Less Deaths in Montreal in 1902.—Reports compiled at the City Hall, Montreal, show that there have been so far 700 less deaths in that city than for the corresponding time in 1901. The cause is put down to the cool summer, there being a much lighter infant mortality this summer than for years past.

Annual Meeting of the Executive Health Officers of Ontario.—The annual meeting of this association was held at Berlin, Ont., September 9 and 10, under the presidency of Dr. E. E. Kitchen of St. George. Among other matters discussed were: Control of outbreaks of diphtheria and smallpox, and a special report on the failure of vaccine.

Quebec Dental Association.—The Dental Association of the Province of Quebec has appointed a special committee to confer with the College of Physicians and Surgeons of that province, with a view to dealing with certain physicians who are practicing dentistry without having obtained a license or passing the examinations. The dental association claims that this is illegal and will, if possible, put a stop to it.

New Isolation Buildings at Montreal.—The new isolation buildings in connection with the Royal Victoria Hospital, Montreal, are rapidly nearing completion and will be probably opened in a couple of months. The interior appointments are said to be magnificent. The floors of the different rooms are of tiles, and the walls are finished in marble and specially prepared hardened plaster. In future all cases of contagious diseases of a virulent type will be isolated in this building.

The Quebec Medical Board.—The semi-annual meeting of the Quebec Medical Board was held at Quebec, September 25. A resolution asking the Quebec legislature at its next session to pass the necessary legislation to enable the Federal Government to deal with Dr. Roddick's medical bill was defeated by twenty-one to eleven votes. Dr. Roddick was seen in reference to the defeat of this motion in the Quebec Medical Council, and stated that his course would not be altered thereby. The necessary legislation will be introduced at the coming session of the Quebec legislature.

The Chair of Hygiene at McGill University.—The chair of hygiene in the Faculty of Medicine at McGill University, rendered vacant some months ago through the death of Dr. Wyatt Johnston, will not be filled until a superior man can be found willing to accept it. Some little time ago the position was offered to Dr. Hanken, an eminent English bacteriologist in the employ of the Indian government, but the salary in his present position was doubled, hence a refusal of the offer. The Faculty now has three men in view, any one of whom would be acceptable to them. These are Dr. Balfour of Edinburgh; Dr. Abbott of Philadelphia and Dr. Westbrook of Minneapolis.

Raising the Matriculation Standard in Quebec.—A matter which will be sure to cause no little amount of friction among medical men in the province of Quebec is the action taken at the semi-annual meeting of the Quebec Medical Council with respect to the literary examination necessary for admission to the study of medicine. Hereafter, all students wishing to enter medicine with a view to secure a license to practice in the province of Quebec will be obliged first to pass the literary examination prescribed by the board. The board has decided that all students of medicine must previously have taken the "Cours Classique Complet," which is said to bar English students, it being the regular course of study in the French colleges. The physicians representing the minority on the board will meet in the near future. It is claimed by some that the action of the board is to prevent McGill from continuing the plan of six years' study.

FOREIGN.

Women in Official Medical Positions.—Mme. A. Vassiliades has been appointed physician to the prison for women at Athens, the first woman to receive an official post in Greece. The new professor of anatomy at Milan is also a woman, Rina Martio.

Cholera Threatens Mecca Pilgrimage.—The extent and fatality of the cholera epidemic in Egypt leads the *Cologne Gazette* to urge an international conference of the powers to suppress the pilgrimage to Mecca, which is such a potent disseminator of the disease.

Virchow's Successor.—Johannes Orth, professor of pathologic anatomy in the University of Goettingen, succeeds the late Professor Virchow to the chair of pathologic anatomy in the University of Berlin. Professor Orth was for many years Professor Virchow's assistant.

The Percentage of Physicians in Europe.—A recent number of the *Ztft. f. Social-Wissenschaft* contains an article by Prizing which states that the proportion of medical men to every 1000 inhabitants is in Germany, 5.1; in Austria, 4.1; in Hungary, 2.8; in Italy, 6.3; in Switzerland, 6.1; in France, 3.9; in Spain, 7.1; in Belgium, 5.2; in England, 6.1; in Scotland, 7.7; in Ireland, 5.6; in Denmark, 6.4; in Norway, 5.3; in Sweden, 2.7, and in Russia, 2.7; in Vienna, 13; Berlin, 1.41; Budapest, 1.64; Paris, 0.97; Brussels, 1.47; London, 1.28, and Madrid, 2.44.

Scarlet Fever Serum Successful.—At the seventy-fourth annual Congress of German Physicians and Naturalists at Carlsbad, September 21 to 28, Dr. Moser, the assistant physician at St. Anne's Hospital for Children at Vienna, reported great success with the new scarlet fever serum. During the last two years he has tried it on 400 patients. The mortality was decreased to 8 or 9 per cent. The rate at the other hospitals was double this. The congress has been informed that the government will vote a considerable sum of money in order that the serum may be made in large quantities and distributed to all the children's hospitals in Vienna.

The New Serum Institute at Copenhagen.—The official institute for the production of serums has just been dedicated at Copenhagen with much ceremony. The laboratory for medical bacteriology, as the mother institution, issued a fine Festschrift of 300 pages on the occasion, which contains among other articles a work on the chemical relations in hemolysis, from the pen of Professor Arrhenius and Madsen. Among the scientists present at the ceremonies were Münter from Buffalo, Retzius and Selander from Sweden, Hansen and Holst from Norway, Heymanns from Belgium, and several from England. The institute has fine arrangements for the horses, goats, guinea-pigs, etc., and is even provided with a pond for frogs. Titles were conferred by the Danish government on Salomonsen, director of the institute, and on Madsen.

Virchow's Funeral.—A partial list of the telegrams of condolence received by Virchow's family reads like a catalog of the learned societies of the entire world, besides the innumerable telegrams from private individuals. The city of Berlin took charge of the funeral, which gathered distinguished men from every quarter of Europe. The floral tributes almost overwhelmed the city hall, where the services were held. Conspicuous among them was the wreath more than six feet in diameter, offered by the city. The principal addresses were by Professor Waldeyer and the chief magistrate and mayor of the city. The latter mentioned that Virchow had been a member of the municipal council of Berlin since 1859, and had always taken part systematically in its regular proceedings. He took an interest not only in matters affecting the general welfare, but there was scarcely a single branch of the administration of city affairs in which his influence was not felt, stimulating, encouraging and actively aiding. He helped lay the foundations for the lowest grades of the public school system as well as the highest. He was an active mover in the creating of the system of municipal meat inspection, municipal disinfecting plants and free baths. He also aided in planning and organizing the public hospitals, asylums and sanatoriums. The great sewerage system of Berlin was suggested by him and he helped to realize and consummate it. All these long and comprehensive labors were inspired by his strict sense of duty, his perseverance in the accomplishment of great tasks, and his longing to apply the achievements of scientific research for the benefit of all. In his work in city matters he never wished to command, to insist on his own way, but to instruct and convince, and thus be of service. Entirely apart from his scientific fame, Virchow is a pattern for all men as a model citizen, tireless in his efforts for the welfare of all. Many tributes were paid to the wife with whom he had had fifty-three years of happy wedded life, who had ensured him peace and tranquillity, and surrounded with home comforts. It was stated in one of the addresses that Virchow had been occupied with some scientific task till 5 a. m. on the day of his accident. His work in parliament was extolled in equally appreciative terms. He had never sought popularity, but every child knows his name, and it is an inspiration for even the day laborer, as a power, the incarnation of a principle. One of his daughters is the wife of Professor Henning of Strassburg, and the other of Professor Rabl of Prague. Dr. Hans Virchow is his son, and Dr. Paul Ruge his nephew. His wife is the daughter of the late gynecologist, Karl Mayer.

LONDON LETTER.

Outbreak of Food Poisoning at Derby.

A serious outbreak of food poisoning has occurred in the town and neighborhood of Derby and probably affected considerably more than 150 persons. In the borough of Derby 30 families, including about 100 persons, were attacked. Fifteen members of the household were affected; 11 of another. All those who suffered had partaken of pork pie and other food obtained from a particular pork butcher in the town who deservedly holds a high reputation in his business. In no case was any complaint made as to the general condition of the food by those who consumed it. Simultaneously with the cases in Derby and district other cases were recorded in London and Cheltenham in persons who ate pork pie brought from Derby. Professor Delépine of Owens College, Manchester, has presented a preliminary report on the result of a bacteriological examination. He has isolated a bacillus belonging to the colon group, but is not as yet in a position to name it more accurately. The evidence as to the relation of this bacillus to the epidemic is absolutely clear; the bacillus has been isolated not only from the pork pies, but also from the blood, spleen and intestines of a fatal case, and from the blood, spleen, bile and intestine of several animals which died in two or three days from the effects of feeding on the pies. The bacilli obtained from all these sources are identical. Animals inoculated with this bacillus have died, and in their blood the same bacillus has been found. Four specimens of blood obtained from patients who were ill after eating pork pie have given with the bacillus a clear serum reaction, while no similar reaction with the bacillus was given by the blood of normal persons or of a patient affected with typhoid fever. The bacillus, Professor Delépine concludes, must have contaminated some article entering into the composition of the pie, probably the meat or the jelly, while these were exposed to chances of external contamination. He considers it most probable that the jelly, which is poured into the pie after it has been baked, and which can be melted without much heat, was the article thus contaminated. On microscopic examination the jelly was found full of colonies of bacteria, the large majority of which were produced by the same bacillus as was found in the blood of experimental animals; this bacillus, which is one of those frequently associated with fecal contamination, might have been conveyed by dust from some distance. The bacillus grew at ordinary room temperature, multiplied with extraordinary rapidity, and rendered broth turbid within two hours.

The Gambia Medical Expedition.

The eighth expedition of the Liverpool School of Tropical Medicine, under Dr. J. F. Dutton and Dr. J. L. Todd, started for the Gambia and French Senegal on August 23 last. The French government having been invited to attach a scientist to the expedition, M. Doumergue, the minister of the colonies, has written to say he would have been glad to accept the invitation, but that his department has arranged to send to the French West African possessions special doctors for the purpose of studying the different tropical diseases there. These doctors will be pleased, if occasion offers, to associate themselves with the Liverpool School of Tropical Medicine in its work.

The Indian Census. Effect on the Population of the Great Famine.

The total population of British India, according to a statistical abstract issued by the India Office, is 294,360,356. This is an increase of 7,136,925 on the census of 1891. The increase is only to be found in British territory, for in the native states there is a decline of 3,585,938. This is due to the plague and famine. For instance, in Baroda the population last year was 944,058, whereas in 1891 it was 2,415,369. Equally startling are the figures in the Majputana agency, namely, 4,619,055, as against 12,016,102, and in the Bombay States, 6,908,648, against 8,059,298. Indeed, the difference per cent. in the native states between the two periods shows a decline of 5.43, the population of 1891 being 66,047,487, while in 1901 it is recorded as 62,461,549. In British territory the increase is 4.85 per cent. The largest towns are Calcutta, with a population of 1,026,987; Bombay, 776,006 (a decline of 48,758 on the register of 1891, due mainly to plague); and Madras, 509,346. The expenditure last year on famine relief was $20,060,000, an amount nearly double that spent in 1899-1900, when of course the suffering was not so great. In 1897-8, the period of the previous memorable outbreak, $15,275,000 was spent in relief. The number of persons killed in 1900 by tigers was 943, and those bitten by snakes was 22,391, but the latter figure can not be relied on, for the reason that relatives frequently poison an undesirable member of the family and register the death as due to "snake-bite." The number of wild beasts destroyed was 17,250, and the slayers received "rewards" amounting to 104,097 rupees. No fewer than 87,910 snakes were killed, the financial recognition totaling 3218 rupees. In this case, also, however, the rewards were found to give rise to a flourishing and profitable industry in snake-rearing.

Lunacy in England and Wales.

The fifty-sixth report of the Commissioners in Lunacy has been issued as a blue-book. From this it appears that, according to the statutory returns, the total number of notified lunatics in England and Wales, on January 1, 1902, was 110,713, being 2769 more than on the same day in 1901. This increase compares with an increase of 1333 in 1900, one of 1525 in 1899, and one of 3114 in 1898. The average annual increase in the ten years ending Dec. 31, 1901, was 2286, and in the five years ending the same day 2270. The increase in 1901, therefore, exceeded the average annual increase in the preceding five years by 500.

Correspondence.

The Canonization of a Divine Healer in Russia.

DENVER, COLO., Sept. 22, 1902.

To the Editor:—The divine healers, Christian scientists et al in the United States and elsewhere should hurry up and go to Russia for instructions in their art of divination, for it is in orthodox Russia that things are carried to their extreme limit of what sane people call absurdity, but which to the minds of the befogged should mean, logical conclusions. There, in mother Russia, once a divine healer is a healer forever; he performs the same functions after his death as when alive, a feat not yet attained by the crack-brained in the United

States. The following proclamation, published in the government organ *Pravitelstvenni Vyestnik*, reads like a document of the middle ages:

The memory of the holy Seraphim of the Saratov desert, who was gathered unto his fathers, Jan. 2, 1833, is kept in deep veneration by the orthodox Russian people. To the place of his great deeds and eternal rest, unceasingly and in great numbers, from all parts of Russia, pilgrims flock, supplicating for his intercession and his prayers before the Lord, and according to their faith, are either restored to health or receive miraculous aid in their daily tribulations. More than one hundred cases of such gracious deeds of succor obtained through the invocations directed to the aged Seraphim have been entered upon the record kept for this purpose at the instance of the Holy Synod, at the Saratov Monastery, since 1885. The popular faith in the saintliness of the aged Seraphim and in his intercession before God for those who humbly offer to him their homage *is also shared by the* Crown-Wearing Leader of the Russian People, the Virtuous Lord Emperor Nikolai Alexandrovitch.

Now, on this the birthday of Seraphim, July the 19th, 1902, His Majesty has graciously remembered him—the prayerful deeds of the deceased as well as the universal adoration of his memory, and has expressed His faith that the canonization of the holy man, the preparations for which had already begun in the Holy Synod, may be forthwith completed.

The thousands of Russian physicians who had read this "gracious" remembrance of the "virtuous" Czar must have felt greatly humiliated at their powerlessness to protest against this absurd, degrading and pagan act of their government, for woe to him who was caught even laughing in his sleeve at the reading of this document.

Woe to the country whose king rules by divine grace, and whose subjects worship divine healers.

C. D. Spivak, M.D.

Excursion to International Medical Congress.

St. Joseph, Mo., Sept. 23, 1902.

To the Editor:—I have just made arrangements for conducting a party to Madrid to the International Medical Congress at the expense of $265.00 minimum. The trip can be made in a little over four weeks. This amount will cover all expenses, including first-class ocean passage each way, first-class railway travel, hotel accommodations for fourteen days in Spain, all transfers of baggage, several days sight seeing in Madrid, all fees for hotel service, etc., including the services of a first-class conductor and interpreter. Side trips, of course, can be taken, and the stay extended indefinitely by those who wish to remain longer in foreign countries. The trip will be a most enjoyable one at that season of the year, going and coming via Gibraltar. If you will kindly call attention to this matter in your columns, I shall be under many obligations, stating that a program giving details of the trip will be mailed upon application to me. Chas. Wood Fassett.

State Boards of Registration.

Connecticut Examination.—Dr. C. A. Lindsley, secretary of the Connecticut State Board of Health, has kindly given us the following information concerning the recent examinations in that state. The committee of the Connecticut Medical Society on March 11 and July 8 examined at New Haven 51 applicants, of whom 43 passed and 8 failed. There were 80 written questions on 8 subjects and 75 per cent. was required. A summary by colleges follows. We are unable to give the percentages.

College.	Total Examined.	Passed.	Failed.
Yale Medical Department	11	11	.
College of Physicians and Surgeons, N. Y.	7	7	.
Bellevue Medical College, New York	2	2	.
New York University	1	1	.
Long Island Medical College	2	1	1
Syracuse University	1	1	.
University of Vermont	3	3	.
Harvard University	1	1	.
Cornell University	1	1	.
Jefferson Medical College	3	3	.
University of Pennsylvania	2	2	.
Woman's, Pennsylvania	2	2	.
Johns Hopkins University	2	2	.
Baltimore Medical College	3	1	2
Medico-Chirurgical, Pennsylvania	2	1	1
Tufts Medical College	1	1	.
Medical College of Alabama	1	.	1
University of the South	1	.	1
Physicians and Surgeons of Atlanta	1	1	.
University of Minnesota	1	1	.
McGill University	1	1	.
Trinity, Toronto	1	.	1
Starling Medical College	1	.	1

The committee of the Connecticut Homeopathic Medical Society has examined 5 by written examination on 8 subjects with the following results (the college of one candidate is not known):

College.	Total Examined.	Passed.	Failed.
Hahnemann College, Philadelphia	2	2	.
New York Homeopathic College	1	1	.
Boston University School of Medicine	1	.	1

The Eclectic Medical Society has held no examination this year, there being no applicants.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PROFESSIONAL ETIQUETTE.

Faribault, Minn., Sept. 29, 1902.

To the Editor:—I am a subscriber of The Journal and as such, as well as to settle a mooted question, I take the liberty of asking you a question in ethics. A physician decides to locate in a town; what is his duty after arriving at his place of destination, to wait for the physicians already located there to call on him first, or to call on them first? D. M. C.

Ans.—It is the duty of a physician locating in a place to call on all physicians already practicing there whose friendship and professional fellowship he desires.—Ed.

Marriages.

Francis J. Durocher, M.D., to Miss Bella Montie, both of Ecorse, Mich.

Harry D. F. Browning, M.D., to Miss Eda Kracke, both of Moline, Ill., September 17.

Edward A. Montenyohl, M.D., to Miss Clara A. Gall, both of Akron, Ohio, September 18.

Calvin Weidner, M.D., to Miss Edith May Foulds, both of Manchester, Conn., October 1.

Dennis J. McCabe, M.D., to Miss Elizabeth Lavertu, both of Berlin, N. H., September 17.

Timothy M. Lippitt, M.D., to Miss Edith Edmonds, both of Columbus, Ohio, September 18.

Albertus J. Burge, M.D., to Miss Adelaide Lasket, both of Iowa City, Iowa, September 11.

William P. Schwartz, M.D., to Miss Annie Zottmann, both of Louisville, Ky., September 17.

William F. Morris, M.D., to Miss Ercel Arburn, both of Fort Branch, Ind., September 16.

George H. Fox, M.D., to Miss Emilia Sophia Karthaus, both of Philadelphia, September 19.

Alois B. Graham, M.D., Indianapolis, to Miss Aimee Bindley of Terre Haute, Ind., September 24.

Micheal Casper, M.D., Louisville, Ky., to Miss Clara Louise Dwyer at Cannelton, Ind., September 17.

Charles A. De Vor, M.D., Rosendale, Wis., to Miss Nina Walker, ot Postville, Iowa, September 16.

George M. Milner, Goethite, Ala., to Miss Elizabeth Pearl Dickey of Birmingham, Ala., September 17.

Thomas James, Jr., M.D., to Miss Katherine Whiting McClure, both of Louisville, Ky., September 17.

Charles J. Downey, M.D., Springfield, Mass., to Miss Mary Estella Cormick of Lee, Mass., September 17.

Bernard F. Bettelheim, M.D., Alliance, Neb., to Miss Florence Keats of Spearfish, S.D., September 16.

Samuel M. Lougeay, M.D., to Miss Carrie Burgard, both of Fayetteville, Ill., at Nashville, Ill., September 16.

John Walter Shafer, M.D., Morocco, Ind., to Miss Olive May Rippeteau of Jamestown, Ind., September 10.

Capt. William Eugene Vose, assistant surgeon, U. S. Army, to Miss Irene Viola Shrields of Highland Park, Ill., October 2.

Deaths.

Alphonso L. Cory, M.D. Rush Medical College, Chicago, 1892, an esteemed practitioner of Chicago, resident surgeon of the Lake Shore & Michigan Southern Railway, a member of the American Medical Association, Chicago Medical Society, Medico-Legal Society and Physicians' Club, and for several years chief of the attending staff of the Englewood Union Hospital, died at his residence in Chicago, September 25, from pneumonia, after an illness of one week, aged 51.

Charles H. Johnson, M.D. New York University, 1880, a well-known physician of Brooklyn, N. Y., and a member of the Kings County Medical Society, Associated Physicians of Long Island, Brooklyn Pathological Society and the Physicians' Mutual Aid Society, died at his home, September 18, from chronic neuritis and cerebral anemia, after an illness of one year, aged 48.

Edmund K. Perrine, M.D. Jefferson Medical College, Philadelphia, 1886, M.R.C.S. Eng., 1891, a well-known ophthalmologist of Philadelphia, a member of the Philadelphia County Medical Society and of the American Medical Association, died at his residence in Philadelphia, September 18, aged 40.

Walker Curry, M.D. University of Pennsylvania, Philadelphia, 1857, a prominent physician of New York City, who served during the Civil war as a surgeon in the Confederate service, died from pleurisy while visiting friends in Branford, Conn., September 20, aged 60.

Charles W. Williams, M.D. Kentucky School of Medicine, Louisville, 1880, a member of the Otero County Medical Society, Colorado State Medical Society and of the American Medical Association, died recently from brain fever at his home in Manzanola, Colo.

A. M. Burns, M.D. Missouri Medical College, St. Louis, 1878, a retired physician who had been out of health for a long time, and was despondent, was found dead in bed at his home in Huntington, Ind., September 18. It is supposed that he killed himself.

John H. Justice, M.D. Medical College of Indiana, Indianapolis, 1882, a member of the Hancock County Medical Society and of the American Medical Association, died at his home in Greenfield, Ind., September 16, from meningitis, after a short illness, aged 48.

Jesse H. Peek, M.D. University of Virginia, Charlottesville, 1875, a member of the examining board of the Hampton National Soldiers' Home, died at his home in Hampton, Va., September 20, from Bright's disease, complicated with pneumonia, aged 47.

Thomas B. Jones, M.D. Medical College of Ohio, Cincinnati, 1870, died recently at his home in Lynnville, Ind. The Warrick County Medical Society, at its meeting in Boonville, September 9, passed resolutions expressive of sorrow and sympathy.

George F. Hunter, M.D. University of Buffalo, N. Y., 1881, formerly of Michigan, who went to California four years ago on account of lung disease, died in Columbia, Cal., from a self-inflicted gunshot wound of the head, September 11, aged 48.

Arthur S. Bridwell, M.D. Southern Medical College, Atlanta, Ga., 1889, first ward city physician of Atlanta, Ga., died at Grady Hospital in that city, September 14, from jaundice, after an illness of four weeks, aged 38.

Silas F. Gifford, M.D. Castleton (Vt.) Medical College, 1852, one of the oldest and most respected physicians of Norfolk County, Mass., died at his home in Avon, September 18, after an illness of three weeks, aged 78.

Thomas B. Wright, M.D. Jefferson Medical College, Philadelphia, 1885, health officer of Bowling Green, Ky., died at his home in that place from peritonitis, September 18, after an illness of eight weeks, aged 40.

Rufus L. McElroy, M.D. Missouri Medical College, St. Louis, 1896, a promising young physician of Salt Lake City, died at Portland, Ore., from heart disease, September 21, after an illness of two months.

Henry A. Armstrong, M.D. Bellevue Hospital Medical College, New York, 1886, who was obliged to leave Akron, Ohio, on account of his health, died at Pueblo, Colo., after a long illness, September 19.

Harry A. Bell, M.D. University of Pennsylvania, 1897, oldest son of the late Dr. Samuel F. Bell, of Butler, Pa., died at Tucson, Ariz., where he had gone for his health, September 21, aged 28.

Miscellany.

Health and Character of Drummers.—It is stated in the press cable dispatches that the Austrian Ministry of Commerce has recently published the provisions of a new law requiring all commercial travelers to furnish certificates of character and medical certificates that they are not afflicted with any infectious disease or "physical marks of a repulsive character." On presentation of such documents dating back not over a fortnight a license is given, but only for one year. It is evident that the paternal Austrian government intends to look after the welfare of its subjects and not suffer them to become the victims of commercialism through depravation by drummers. It indicates, however, a state of affairs that we hope does not exist elsewhere, and we had not understood that the Austrian communities were such virgin soil that they could be considered in serious peril from any such source.

Insane Complications.—The Baltimore man who, a year ago, kicked his mother-in-law to death, was adjudged insane, and committed to the Maryland Asylum for the Insane. He recently took advantage of the liberty allowed the patients and escaped to Virginia. The authorities of that state now refuse to allow him to be brought back, and the matter will have to be decided in the courts. For just such cases the secretary of the lunacy commission, Dr. Geo. J. Preston, has for several years urged provision should be made. He again urges that a separate building should be constructed at one of the state institutions, accommodating 50 to 75 persons, where the criminal insane may be isolated and kept under strict surveillance. The class of criminal insane—insane at the time of the commission of the act or becoming so afterward—is steadily increasing, and they should be as safely guarded if they were in our penal institutions. It is placing an unnecessary indignity on the insane to place criminals in the same wards with them. The appropriation required is a very modest one. It is said that whatever the decision of the Virginia judge the case will be appealed to the Court of Appeals of Virginia. The case has no parallel in the decisions of the state, and as far as known none in the entire country.

Societies.

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 7, 1902.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Birmingham, Ala., Oct. 7-9, 1902.
Idaho State Medical Society, Moscow, Oct. 9-10, 1902.
Vermont State Medical Society, Burlington, Oct. 9-10, 1902.
Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.
Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Selma (Ala.) Medical Society.—The physicians of Selma met, September 20, and organized this society with Dr. John P. Furniss, president; Dr. Edwin B. Ward, vice-president, and Dr. Barney B. Rogan, secretary.

Centralia (Ill.) Medical Society.—At the annual meeting of this society Dr. Charles N. Dunn was elected president; Dr. Emanuel Broomer, vice-president; Dr. Edgar E. Fyke, secretary, and Dr. Otto D. Diehl, treasurer.

Bristol North District (Mass.) Medical Society.—The semi-annual meeting of this society was held at Bristol, September 18. Dr. Joshua C. Hubbard, Boston, read a paper on "Deciduoma Malignum, with Report of a Case."

Branch County (Mich.) Medical Society.—This society was organized last week at Coldwater, with Dr. Henry W. Whitmore, Quincy, president; Dr. J. H. Anderson, Union City, secretary, and Dr. Stephen H. Clizbe, Coldwater, treasurer.

Millers River (Mass.) Medical Association.—This association met at Athol, and re-organized with the following officers: Dr. A. V. Bowker, Athol, president; Dr. Francis E. Johnson, Erving, vice-president, and Dr. G. L. Perry, Athol, secretary and treasurer.

Huron County (Mich.) Medical Society.—On September 17 the physicians of Huron County met and organized this society with Dr. Anthony M. Oldfield, Harbor Beach, president; Dr. Willet J. Herrington, Bad Axe, vice-president, and Dr. D. J. McColl, Elkton, secretary and treasurer.

Stearns and Benton County (Minn.) Medical Society.—This society has been organized at St. Cloud, with Dr. Pierre A. Hilbert, Melrose, president; Dr. Warren L. Beebe, St. Cloud, vice-president; Dr. John C. Boehm, St. Cloud, secretary, and Dr. G. Arthur Chilgren, Sauk Rapids, treasurer.

St. Louis Medical Society of Missouri.—After the address of Dr. William Osler, Baltimore, on "William Beaumont, America's First Great Physiologist," before the society, October 4, a reception will be given, followed by a banquet limited to the members of the society, at the West End Hotel.

Stark County (Ohio) Medical Society.—The Stark County Academy of Medicine held its last meeting, September 11, at Massillon. At this time a new constitution and by-laws were adopted in conformity with those of the Ohio State Medical Society and of the American Medical Association.

Washington County (Vt.) Medical Society.—The annual meeting of this society was held in Barre, September 9. Dr. Arthur B. Bisbee, Montpelier, was elected president; Dr. Myron L. Chandler, Barre, vice-president; Dr. Orlando G. Stickney, Barre, secretary, and Dr. Charles E. Chandler, Montpelier, treasurer.

Greene County (Ill.) Medical Society.—The annual election of officers was held at Carrollton, September 20, and resulted as follows: President, Dr. James T. Crow, Carrollton; vice-presidents, Drs. Henry W. Hand, White Hall, and John W. Adams, Walkerville, and secretary and treasurer, Dr. Henry A. Chapin, White Hall.

Whiteside (Ill.) Medical Association.—The permanent organization of this society was effected at the meeting held in Sterling, September 11. The following officers were elected: President, Dr. Arthur E. McBride, Sterling; vice-president, Dr. James A. Nowlen, Morrison; secretary, Dr. Perry F. Perdue, Lyndon, and treasurer, Dr. John F. Keefer, Sterling.

St. Francis (Quebec) Medical Association.—This organization elected officers at its meeting at Magog, September 10, with the following results: President, Dr. William D. Smith, Sherbrooke; vice-presidents, Drs. J. Oct, Goyette, and George A. Bowen, Magog; secretary, Dr. F. A. Gadbois, Sherbrooke, and assistant secretary, Dr. Aylwin F. Foss, Lennoxville.

Association of Pennsylvania Railroad Surgeons.—This body held its twenty-first annual meeting at Pittsburg, September 12. Dr. Stewart L. McCurdy, Pittsburg, was elected president; Dr. G. W. Thompson, Winamac, Ind., vice-president, and Dr. Richard J. Morgan, Van Wert, Ohio, secretary and treasurer. The next meeting will be held in Fort Wayne, Ind., in September, 1903.

Montcalm County (Mich.) Medical Society.—The physicians of Montcalm County met at Stanton and organized this society with the following officers: Dr. John Avery, Greenville, president; Drs. Norman E. Bachman, Stanton, Francis R. Blanchard, Lake View; George A. Stanton, Belding, and Lyman S. Crotser, Edmore, vice-presidents, and Dr. Horace L. Bower, Greenville, secretary and treasurer.

Craighead County (Ark.) Medical Society.—This society met at Jonesboro, September 2, for the purpose of re-organizing on the lines recommended by the American Medical Association. Dr. Ben. L. Harrison, Jonesboro, was elected president; Dr. Robert A. Simpson, Bay, vice-president; Dr. Joseph T. Baker, Jonesboro, secretary; Dr. C. T. Cannaday, Brookland, treasurer, and Dr. W. C. Halton, librarian.

Medical Society of the Missouri Valley.—This society held its fifteenth annual meeting at Sioux City, September 18. The following officers were elected: Dr. James M. Barstow, Council Bluffs, Iowa, president; Drs. Mary Strong, Omaha, Neb., and Robert E. Conniff, Sioux City, Iowa, vice-presidents, and Dr. Wood, Sioux City, Iowa, secretary. Dr. Donald Macrae, Council Bluffs, Iowa, was re-elected treasurer.

International Congress of Hygiene and Demography.—The ninth congress will be held at Brussels, Belgium, September 2 to 8, 1903. All communications must be received before May, 1903, will be printed in the author's language, with a summary in French at the close, and distributed to the members before the congress convenes. There are to be seven sections, including one on colonial hygiene. The Belgian government is taking an active interest in the propaganda of this congress.

Arkansas Medical Society.—This society, which adjourned to meet at Jonesboro, May 12 to 14, 1903, has changed the date on account of the meeting of the American Medical Association in New Orleans, May 5 to 8, to be from April 30 to May 2. The president of the society has issued a call for the first meeting of the councilors of the society at Little Rock, October 20, to devise ways and means of perfecting the reorganization of the society through the county societies in conformity with the new constitution adopted at the recent meeting in Little Rock.

Medical Association of the State of Tennessee.—In accordance with a resolution adopted at Memphis by the State Medical Association a charter for its incorporation has been applied for. The incorporators are: Drs. S. R. Millis, D. E. Nelson, W. K. Vance, T. K. Powell, T. J. Happel, G. C. Savage, W. D. Haggard and Deering J. Roberts. The purpose of the incorporation as recited by the charter is for the advancement of medical knowledge, elevation of professional interests of the members of the association, the extension of the bounds of medical science and promotion of all means adapted to relieve suffering, improve health and save life.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held in Washington, D. C., Sept. 16-18, 1902.

The President, Dr. Edwin Ricketts, Cincinnati, in the Chair.

(*Continued from page 791.*)

Ruptured Pus Tubes.

Dr. Charles Greene Cumston, Boston, said there were two methods of dealing with pus tubes, one of which was posterior colpotomy, followed by incision and drainage of the sac, while the second was to remove the tube, and if the condition was bilateral to do a total hysterectomy. Naturally, the easiest and least dangerous method was drainage of the perforated pyosalpinx through the vagina. The proper treatment, however, for perforated pus tubes, was abdominal incision, whether perforation had taken place in the general peritoneal cavity or into the intestine, bladder or vagina. He did not favor vaginal hysterectomy in cases of perforated pus tubes, although he believed that when the sac had burst into the bladder the vaginal route might be indicated under certain circumstances.

The Importance of an Apprenticeship in Operative Gynecology.

Dr. Gurney Williams, Philadelphia, read a paper with this title, in which he said that the modern apprenticeship differed materially from that of a quarter of a century or more ago, when the specialty was being developed by men with large and varied professional and surgical experience. Again, the nature of the work in those days differed greatly from the modern. Hospitals, now so common in every state and city, were not giving their resident physicians the practical education or using the vast amount of material at their command for that purpose. He spoke from experience in this matter, for, after serving in two large hospitals thirty-six months, it was necessary for him to go elsewhere for practical instruction and the apprenticeship desired. All hospitals, he contended, should be practical schools for the residents and the visiting medical and surgical staffs.

The Irrational Starvation Treatment of Appendicitis.

Dr. John B. Deaver, Philadelphia, said his experience of 98 cases for the past two and a half months had furnished a lesson from which objections to the rest or starvation treatment were drawn. The particulars of these cases were detailed. The lessons drawn were that an early operation, preferably in the stage of appendiceal colic, was the only rational procedure, and was the only treatment which would reduce the mortality in acute appendicitis to insignificant figures; that the so-called rest treatment of appendicitis failed to check peritoneal inflammation, and would, in the majority of cases, harm the patient. The statistics presented in the paper bore out the above statements to the letter. He was willing to grant that operation in the presence of an acutely inflamed general peritonitis was attended by great risk to life, and therefore it was often wise to defer operation in the hope that the inflammatory process would become localized. This was often his practice; but he denied that the starvation plan of treatment promised more in such cases than the mere common practice of abstaining absolutely from giving opium, keeping the bowels freely open by solid cathartics, or, as some physicians preferred, a hydragogue cathartic, which was both antiseptic and germicidal, giving nourishment by the rectum, when the stomach was tolerant, and using ice or heat locally in the shape of poultices or hot turpentine stupes.

Our Shortcomings: Let Us Reason Together.

This was the title of the presidential address, which was delivered by Dr. Edwin Ricketts, Cincinnati. Speaking of the general practitioner, he said he was the backbone of medicine. It should not be otherwise. With just and co-equal considerate relations the best interests of the physician and specialist were not to be severed. With changed relations toward the general practitioner complications were sure to arise.

Abdominal surgery and gynecology in the hands of all operators was being accompanied with a higher mortality than was true of that done by special workers. Reasons were advanced why the physician and all those engaged in the practice of specialties should enter the political arena. It would teach them what organization was, what and how power can be wielded for good. It would result in pronounced efforts for the organization of the medical profession which in due time was to command respectful consideration from the national, state and county governments. Such would make a free and independent profession.

Abdominal Section During Pregnancy.

DR. J. HENRY CARSTENS, Detroit, had had the following cases complicating pregnancy: Appendicitis, 5 cases; fibroids, 4; hernia, 1; abdominal hysterectomy, 1; ovariotomy, 3; vaginal hysterectomy, 3, and miscellaneous 3, or altogether 20 cases and 5 deaths, so that the mortality was 25 per cent. This included all his cases. He thought that to-day the mortality would be far less.

All acute diseases requiring prompt operation could be operated on just as well as if pregnancy did not exist. Tumors that would interfere with labor should in all cases be operated on, as there was far less danger attached to their removal during pregnancy than there was by non-intervention and letting the woman go to full term. He had seen most lamentable cases of the latter kind. Tumors above the brim of the pelvis, or which could be shoved above the brim of the pelvis need not be interfered with; still, as a rule, all tumors took on a very rapid growth during pregnancy and the increase in size might interfere with the various functions of life and then surgical intervention was required.

Perforating Ulcer of the Duodenum.

DR. JOHN B. MURPHY, Chicago, read this paper. The diagnosis of perforating ulcer was difficult, or, better, practically impossible without an exploratory laparotomy. In many cases there was no evidence of duodenal disease previous to the perforation.

The most important physical sign, in addition to those of perforative peritonitis from perforations in other portions of the intestinal tract, was the flatness of the superficial piano percussion note in the right hypochondrium.

In all cases of perforative peritonitis, to which duodenal perforations were no exception, operation should be done at the earliest possible moment after perforation had taken place; and experience showed that the mortality was in direct ratio to the length of time that elapsed between the occurrence of perforation and the operation. In perforation the longer the escaping material was in contact with the peritoneum, the greater the danger of destruction of its endothelial covering; and thus the greater the danger of absorption. Of thirteen cases operated on more than thirty hours after perforation, all terminated fatally; while in twelve cases where less than 30 hours had elapsed, 66 2/3 per cent. recovered. The operation must be complete; that is, it must be pursued to an effective suture of the perforation. Drainage was insufficient, as of eighteen cases treated by drainage alone, all died.

The prognosis depended, first, on the virulence of the peritonitis produced; second, the time the material had been allowed to remain in the peritoneum; third, on the presence or absence of blistering or abrasion of the peritoneum at the time of operation.

Peritoneal Tuberculosis.

DR. RUFUS B. HALL, Cincinnati, contended that tuberculosis of the peritoneum in women was not a rare affection. It occurred often enough to make it necessary to consider it in the differential diagnosis of all obscure diseases in the pelvis and abdomen. In a large majority of cases coming under his observation there were no appreciable manifestations of the disease in other parts of the body. In no other condition was there the exact regularity in the afternoon rise of temperature as in tuberculosis. All cases of peritoneal tuberculosis in which there was encysted dropsy, or an accumulation of pus or serum, should be operated on; after the necessary surgical repair the abdomen should be drained. He advocated vaginal drainage in women. First, because it gave perfect drainage; and, second, it prevented ventral hernia which so often followed on account of the fact that the drainage tube must be kept in for so many days.

Surgical Treatment of Perforated Gastric Ulcer with General Infection of Peritoneal Cavity.

DR. H. HOWITT, Guelph, Ont., stated that nothing short of early, bold and thorough surgery could save the patient. After repair of the perforation every pouch and corner in the abdomen was thoroughly inspected by sight and flushed clean. Three rubber drainage tubes were used, not one of which was placed in the wound, but through stabs, one at the back in each flank depression below the kidney, and one in the lower abdomen to the right or left of the incision for the pelvis. He reported good results. In conclusion, the essayist stated that he was aware that many surgeons strongly objected to evisceration in abdominal work; but maintained that in the conditions under discussion it was impossible by any other known method to make certain that the toilet of the peritoneum had been done thoroughly, and said that imperfect toilet was followed by more shock and was vastly more dangerous than hours of properly managed evisceration.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. L. H. Dunning, Indianapolis; vice-presidents, Drs. Marcus Rosenwasser, Cleveland, and Herman E. Hayd, Buffalo; secretary, Dr. W. W. Potter, Buffalo; treasurer, Dr. X. O. Werder, Pittsburg. Chicago was selected as the place for holding the next meeting in September, 1903.

CANADIAN MEDICAL ASSOCIATION.

Thirty-Fifth Annual Meeting, held in Montreal, Sept. 16-18, 1902.

The President, Dr. F. J. Shepherd, in the Chair.

(*Continued from page 789.*)

The Abuse of Laboratories.

In the evening of the first day Dr. Francis J. Shepherd, Montreal, delivered the annual presidential address. After a brief résumé of medical progress, the speaker entered a protest against the freedom with which syphilitics are allowed to mingle with the community at large, often causing the innocent to suffer more than the guilty. "It is time," said Dr. Shepherd, "that the profession took this subject up and educated the public to a better knowledge of sanitary laws." Passing on to the subject of modern laboratory teaching, he said: "One danger of this great multiplication of laboratories is that it induces men to pursue original investigation who have not the true scientific spirit, and who are utterly unfit for such work. They frequently collect and publish a mass of useless and undigested material and therefrom draw inaccurate conclusions. But I do not wish it to be inferred that I am opposed to the addition of modern laboratories to our medical schools; they are all necessary, but they must not supplant other work quite as important to a man who wishes to become a practicing physician or surgeon. There is one laboratory which is not so much frequented now as when I was a student; I refer to the hospital wards.

"Students, while perhaps more scientific (microscopic and mechanical) have not the intimate personal knowledge of disease which continued observation at the bedside gives them, so that when started in some out-of-the-way place without their scientific machinery, they are like fish out of water. It may soon be that they will not be able to diagnose a fracture without the *x*-rays, tuberculosis without getting bacilli in the

sputum, and so on without end. Students are not taught to observe so accurately the evident symptoms of disease, and as I say, are becoming mere mechanics who need an armamentarium, which only a great hospital or university can possess, to make an accurate diagnosis of an ordinary disease; the higher and more intellectual means of drawing conclusions by inductive reasoning are almost neglected. Mind you, I do not wish to disparage laboratory teaching; it is essential, but we can have too much of a good thing, and laboratories now-a-days take up too much of the student's time in the latter years of his curriculum. The ordinary student should have a good working knowledge of laboratory methods, and this should be obtained chiefly during his first two years, but the refinements if insisted on will be acquired at the expense of some more useful and practical information, for the average student can only hold so much knowledge—it is hopeless to attempt to put a quart measure into a pint pot."

Speaking of specialism, Dr. Shepherd thought all physicians should acquire a good working knowledge of all specialties, but an excess of time should not be devoted to any one. A year or two of hospital work, followed by some experience in general practice, should be managed by any one who wishes to become a broadminded specialist.

Referring to modern quackery and the inadequate ideas of many superficially educated practitioners, Dr. Shepherd said: "Many of the doctors who write to papers like the '*Alkaline Clinic*,' the '*Medical Short-Cut*,' and others of such character, have a most misty idea of their profession, and apparently are ignorant enough to deceive themselves as well as the public. I fancy they practice all the 'pathies'; one man from Texas asks the editor if he had anything that is a 'dead-shot' for eczema, another asks what is the most 'up-to-date scientific caper' for goiter, and so on."

At the close of his most interesting address Dr. Shepherd paid a high tribute to the late Dr. Wyatt G. Johnston, Dr. William S. Muir, of Truro, and Dr. Brunelle, of the Hotel Dieu.

Gall-Bladder Disease: Diagnosis.

A general meeting of the association on the second day opened with a discussion on diseases of the gall-bladder and bile ducts. Dr. Alexander McPhedran, Toronto, introduced the medical diagnosis. Of the cardinal symptoms he considered jaundice the most common, while pain varies, but is commonly intense. The attendant fever is usually due to toxic absorption. The main diseases to be considered in differential diagnosis, are catarrhal and suppurative cholangitis and acute yellow atrophy. Most catarrhal conditions are infective, but the chills and fever may occur without pus formation. In the gangrenous cases the symptoms are often ill-defined. A most characteristic sign of gallstone is the recurrence of the attack.

Treatment of Gallstone Diseases.

Dr. A. D. Blackader considers the condition more commonly due to altered secretion of the bile ducts, the altered mucus causing inspissation of the bile. He considers that no drugs stimulate the flow of bile to the same extent as the bile salts. The flow is increased by exercise and deep breathing. Diet should be carefully considered, should be simple and as far as possible should contain a large amount of fat. Such patients should drink plenty of pure water or mineral water. The patient should also have due regard to a proper method of dress; no corsets or constricting clothing should be worn.

The subject of surgical treatment was introduced by Dr. J. F. W. Ross, Toronto. In gangrene and empyema of the gall-bladder he does not advise removal of the gall-bladder, but prefers opening, flushing and draining. In many cases of cystic enlargement of the gall-bladder, however, he advised entire removal of the viscus. It is well to remember, after removal of the gall-bladder, that gallstones may form in the liver and be passed out into the intestines. He considers mucus fistulæ, which occasionally follow operation, as the most troublesome, and said the evil should, as far as possible, be prevented by the use of a small drainage tube. He also drew attention to the importance of being sure that the drainage tubes did not become blocked.

The discussion of the surgical treatment was led by Dr. G. E. Armstrong, Montreal, who recommends the employment of medicinal treatment first in gallstones, and lavage of the stomach before operating on all gall-bladder cases, and as it is difficult to know what the surgeon may encounter on opening the abdomen he advises the administration of calcium chlorid before and after operation to prevent possible hemorrhage.

Foreign Bodies in the Vermiform Appendix.

Dr. James Bell, Montreal, expressed his opinion that appendicitis never depends on the presence of foreign bodies in the lumen of the appendix. There is little doubt, however, that when foreign bodies gain entrance accidentally into the appendix they aggravate an otherwise septic infection.

Dr. Osler's Address in Medicine.

At the evening session of the second day the address in medicine was delivered by Dr. William Osler, Baltimore. In opening his splendid address, Dr. Osler spoke of the noble ancestry of our profession. The broad foundations of our professional dignity were laid on the Hippocratic oath. The solidarity of the medical fraternity is preëminent. Our profession is distinguished from all others by its beneficence: witness, anesthesia, sanitation et al. There is no limit to the science of medicine. The outlook for the profession was never brighter than to-day. Many of the diseases of our grandfathers are vanishing. Dr. Osler then put forward a strong plea for the unity of the profession. A sense of self-satisfaction is all too common in the medical ranks as in other walks in life. Chauvinism is an enemy to progress. Dr. Osler mentioned four forms of Chauvinism, namely, national, provincial, parochial and individual. Nationalism is apt to become a widespread vice in so far as this concerns the medical profession; however, international medical congresses have done much to dispel this spirit.

"It helps a man," said Dr. Osler, "to be a bit of a hero-worshiper." Continuing, he said: "There is a remarkable homogeneity of the profession on this continent, still, there is no little provincialism among the profession. Witness, the various provincial medical councils in Canada and the various state boards in the United States." He considers it an outrage that a graduate of Ontario can not practice in Quebec, or a graduate of Quebec in Manitoba—it is democracy run riot; it is provincialism.

THE GENERAL PRACTITIONER.

The solution of this problem rests with the general practitioner. Dr. Osler here paid a high tribute to Dr. Roddick for his indefatigible energy in pushing through the Dominion Medical Bill. Passing on to speak of parochial Chauvinism, Dr. Osler considered we are all tainted with it to some extent. A good method of counteracting this is to encourage professorial interchanges. Chauvinism in the unit, however, is of much more interest and importance. "The consultants do the writing and the talking—and take the fees," said Dr. Osler; "the backbone, however, of the medical profession is the general practitioner." But he should preserve his mental independence and keep up with the times in literature and appliances.

DIAGNOSIS VERSUS DRUGGING.

"Diagnosis, not drugging, is our chief weapon of offense. Lack of systematic personal training in the methods of the recognition of disease leads to the misapplication of remedies, too long courses of treatment, when treatment is useless and so directly to that lack of confidence in our methods which is apt to place us in the eyes of the public on a level with empirics and quacks." One should not degenerate into a mere dispenser of quack nostrums like the drug clerk who has a specific for everything from the pip to the pox. Beware of the huge manufacturing chemical concerns and of the drummer of the drug-house.

Learning alone is not sufficient; culture is the bichlorid to keep him from intellectual deterioration; and, lastly, charity among the profession; make the Golden Rule our Code of Ethics. Adopt the motto of St. Ambrose—"If you can not

speak well of your brother, keep silence." The word of action is stronger than the word of speech.

Typhoid Ulcers.

Three cases of perforating typhoid ulcer successfully operated on were reported by Dr. F. J. Shepherd, Montreal. Dr. Shepherd has always made the lateral incision and has usually found the perforation near the ileocecal valve. By this incision the site of the perforation is more easily found than by the median. He has always closed the incision by turning in the bowel and making use of a continuous Lembert suture, employing fine silk. Other ulcerations in the neighborhood are treated in the same way. Rubber drainage is employed. There is always suppuration in these cases, and usually a hernia as a result. He advises early and rapid operation, and seeing that there are no others likely to perforate.

Election of Officers.

The election of officers resulted as follows: President, Dr. W. H. Morehouse, London, Ont.; vice-presidents, James Warburton, Prince Edward Island; John Stewart, Halifax; W. C. Crockett, Fredericton, N. B.; Dr. Mercier, Montreal; Dr. W. P. Caven, Toronto; Dr. McConnell, Morden, Man.; J. D. Lafferty, Calgary, N. W. T.; C. J. Fagan, Victoria, B. C.; general secretary, George Elliott, Toronto; treasurer, T. H. Small, Ottawa; executive council, Drs. Moore, Eccles and Wishart, London, Ont. The place of the next meeting will be London, Ont.

Dominion Health Bureau.

DR. E. P. LACHAPELLE, secretary of the Board of Health of the Province of Quebec, moved the following resolution, which was carried unanimously:

WHEREAS, Public health, with all that is comprised in the term sanitary science, has acquired great prominence in all civilized countries, and

WHEREAS, Enormously practical results have been secured to the community at large by the creation of health departments, under governmental supervision and control, and

WHEREAS, Greater authority and usefulness are given to health regulation suggestions when they emanate from an acknowledged government department; therefore be it

Resolved, That in the opinion of the Canadian Medical Association, now in session, the time is opportune for the Dominion Government to earnestly consider the expediency of creating a separate department of public health, under one of the existing ministers, so that regulations, suggestions and correspondence on such health matters as fall within the jurisdiction of the Federal Government, may be issued with the authority of a department of public health.

Resolved, That copies of this resolution be sent by the general secretary to the Governor-General in Council and to the Honorable Minister of Agriculture.

Treasurer's Report.

DR. H. B. SMALL reported that 317 members had been in attendance, nearly 100 larger than any other previous meeting. the treasury $325. Thus was closed the greatest meeting in the 35 years of the association.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

(Continued from page 789.)

DR. SANTOLIQUIDO reiterated his opinion that police regulation was a failure and that general educational measures should supplant all supervision. If regulation were to be put in force it should be a medical and not a sanitary control.

DR. RETHAAN MACARE, general counselor to the Supreme Court of Holland, also spoke of the inadequacy of reglementation now in vogue in Holland.

MR. BECO, vice-president of the Congress, said that while it was a fact that, for Brussels at least, the home of reglementation, the system had proven inefficient, it was, nevertheless, not a wise plan to adopt an abolitionist platform. The fault lay, he thought, more in the imperfections of the carrying out of the system than in its principles, and that newer and more modern modifications could use the general plan to advantage. Every illness, he said, had its own prophylaxis, and if syphilis can not be suppressed, as is smallpox, there is no value in stating that an efficient system of prophylaxis may not be found. Time alone can develop a practical system, and the objects of the Congress will have been attained only when the results of various plans have been honestly compared.

DR. DE STUMMER, counselor of state of Russia, said that the laws of Russia were now some 50 years old, yet they were such that they might contribute to the discussion. Procurers of all kinds are very harshly dealt with according to Russian law, minors are prohibited in houses of tolerance, and it is a crime to have sexual congress with a female minor. In St. Petersburg police supervision has been abandoned, the prostitutes come and go, and one of the results has been that the dispensaries for the treatment of venereal diseases have been empty, as the women come once, and finding they do not have to be treated do not come again. Syphilis is largely on the increase. He thought that the professional prostitute, for the large part, was morally insane. Russian physicians believe in a sanitary police distinct from the ordinary police service.

DR. PERONI, Turin, spoke of the increased facilities for the treatment of venereal diseases in Turin.

DR. DE WATROSZEWSKI, inspector of St. Lazar, Warsaw, thought that reglementation added an evil to that already existing.

MR. RETHAAN MACARE proposed the passing of laws which would prevent the marriage of syphilitics. The physician should report to a central medical and judiciary committee. This body would have the legal right to prohibit marriage if one of the contracting parties was syphilitic.

DR. QUEYRAT, Paris, advocated a general moral crusade, and DR. MACCULLOCH of the British army presented some figures which would tend to show that in most of the foreign settlements the abrogation of the English contagious disease acts had been followed by an increase in syphilitic infections among the soldiers.

Laws Against Procurers.

DR. JULIAN, surgeon to St. Lazare, Paris, said that although the first congress had recommended more stringent measures to be taken against procurers, in France, nothing had been done. This class is a most despicable one and now openly plies its trade in the boulevards of Paris. This constitutes a great menace to the citizens not only of Paris but of all France, if not the entire world, since Paris is one of the great schools for the training of prostitutes who go over the entire world in their career.

MR. LE JEUNE, minister of state of Belgium, said that for Belgium, the procurer, cadet, is classed as a special type of criminal, and is so treated. He is not accorded the ordinary privileges of an every-day criminal. He is condemned to seven years' imprisonment by special statutes and he serves his entire time whether he behaves himself or no. Brutal severity alone is his due, as his crime is so atrocious.

The discussion of the subject of public prophylaxis was continued during the morning of the third day. Much had been said by various members of the abolition party about equality of the sexes, the greater part of which met with the hearty approval of all of those present. An extreme section of the Congress maintained that an infected man should be treated in all ways as an infected prostitute. It was frequently pointed out that there was a difference between an occasional buyer and an habitual seller of sexual indulgences and that whereas the contamination might be treated in both sexes alike, that the rules for the control of the prostitute were not logically applicable to the general run of the male sex. Some of the arguments brought out on this general subject afforded amusing incidents in the otherwise very serious tenor of the discussions.

DR. HARTUNG, Breslau, brought out the interesting fact that in that city, as well as in some other parts of Germany, it was possible for the physicians of the government clinics to seek out infected men and compel them to undergo treatment. The law regulating the report of cases of venereal diseases is not widely observed.

PROF. LESSER, Berlin, was emphatic that it was important to remember that in the framing of any regulations concerning the better prophylaxis of venereal diseases, the element of

professional secrecy must be incorporated. He thought that if this were destroyed the confidence of the patient would be lost and that would lead to a tendency to hide the disease.

An American Point of View.

Dr. Valery Havard, United States Army, reported the results obtained by the Committee of Fifteen and also gave the results of his Havana experiences in the Spanish-American war. Speaking for himself, rather than as an organ of the government, he said that he was, in general, a reglementarist, but was open to conviction. Any system that accomplished the results was to be advocated. Sanitary regulation is wise and justifiable; he maintained that a state was privileged to legalize one evil if a greater one could be remedied thereby. The argument that licensing houses encourages prostitution he does not believe to be just or logical. Statistics of army service seem to show that in countries with regulation—France and Germany—the number of infected soldiers runs from 20-35 per thousand, while in England and America they average 120-155 per thousand. In admitting, however, that regulation can and does diminish infection, it is not necessarily applicable throughout, for reglementation will always be a failure in a country where the spirit of the people, be it better or worse, will not permit its entire application. Moral prophylaxis, he believes, should stand at the head of all measures which are proposed as most universally applicable. The raising of a moral ideal is the most potent factor in army social reform, and church and state should work hand in hand to elevate and educate the youth of the land.

Special Conditions and Local Measures.

Dr. Berthod, Paris, made the novel suggestion, for some countries at least, that insurance companies refuse to accept syphilitics as risks. This measure, he thought, would have some influence in the protection of the young woman from the "*dot*"-seeking husband.

Dr. Blaschko, Berlin, brought out some interesting and important features relative to the *Krankenkassen* (Mutual Sickness-Aid Societies) of Germany. These societies are constantly on the increase and if due attention be paid to the methods of their organization, a very important aid in the prophylaxis of venereal diseases will be in hands of the physicians of these societies. He thought that obligatory illness insurance as it exists to-day in Germany is a very influential factor in the diminution of the spread of venereal diseases and in the reduction of medical pauperization.

Dr. Kohn, Berlin, endorsed Dr. Blaschko's views and spoke of the further influences for good resulting from the distribution among the members of the *Krankenkasse* of pamphlets bearing on all the contagious diseases.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

(*Continued from page 790.*)

Feeble-Mindedness or Arrested Psychical Development.

Dr. J. M. Murdoch, superintendent of the State Institution for Feeble-Minded of Western Pennsylvania, was the author of the address in mental disorders. In the pathogenesis of the condition special stress was laid on the excessive use of alcohol, in one or both parents as an etiologic factor. The medical treatment, he maintained, consists in attention to the hygiene. The mental awakening resulting from an improved state of nutrition and bodily vigor, particularly in children taken from the city to an institution in the country, is often very marked. With the exception of sporadic cretinism and those cases associated with epilepsy, little is to be expected from drugs. He regards the history of the thyroid treatment of sporadic cretinism the record of one of the most brilliant triumphs of modern medicine. Feeble-minded children do much better when placed with children of like mental capacity, because with those of their own grade they persevere and feel the stimulus of rivalry, while with normal children they become sensitive, discouraged and give up all effort to advance. The situation is one requiring tact, but the diagnosis having been made the truth should be met fairly and squarely and the parents told that unless the child were trained while the brain is still in a condition of plasticity the possibility of training will have gone forever. As a rule, admission to a suitable institution should not be delayed longer than the eighth year.

The Treatment of the Insane in Private Practice.

Dr. F. Savary Pearce, Philadelphia, stated that the earliest possible treatment should be instituted. Acute insanities of hybrid types are the most hopeful in prognosis and are, therefore, the ones to be kept out of asylums to the last effort, especially where hysteria is an element. Children are decidedly better treated in acute alienation outside of asylum walls. He believed it to be the physician's duty to overcome the terror among the laity for the insane and to engender that hopefulness of treatment in private which is so valuable in general medical affections.

Antagonisms to Scientific Medicine.

President Ball, in the annual address, said that science has always found opponents, and the progress of scientific medicine has not escaped this opposition. After considering vaccination and the study of anatomy by dissection, Dr. Ball referred to the strong opposition to animal experimentation. "It seems to me that the life of any number of the lower animals does not weigh in the balance against a single human soul." "Every experimenter agrees that all experiments on animals should be done with the least degree of suffering that is possible with the successful conduct of the experiment. All the truth, however, is by no means learned. We must find a cure for the great white plague, tuberculosis, and for cancer and tetanus. To these ends experiments are necessary and will be performed; if not on animals, they are pretty sure to be performed on man himself, for it is not possible to permanently check the progress of science."

The New Officers.

At the morning session of the second day the following officers were elected: President, Dr. William M. Welch, Philadelphia; vice-presidents, Drs. Herbert H. Herbst, Allentown; G. Franklin Bell, Lycoming; George W. McNeil, Allegheny, and Samuel P. Heilman, Lebanon; secretary, Dr. C. L. Stevens, Athens; assistant secretary, Dr. Theodore B. Appel, Lancaster; treasurer, Dr. George W. Wagoner, Johnstown. The place of next meeting will be York.

Address in Medicine.

Dr. Aloysius O. J. Kelly, Philadelphia, directed attention to the motives that actuated the profession in establishing state medical boards, and to the fact that the original purpose of the state boards had largely been ignored; that, whereas, the laws as originally contemplated were designed to prevent the quack and charlatan from practicing and to insure that reputable physicians only should practice, the laws as at present administered are inoperative against the quack, and seriously inconvenience reputable practitioners. He then directed attention to the "inaninity and assininity" of many of the state medical board questions, and cited a number in illustration of his contention. He advocated two forms of examination: one a recent graduates', the other a practitioners' examination for practitioners of five or more years' standing. In place of the entirely written examination, he advocated the partial substitution of practical tests. Finally, he advocated interstate reciprocity, maintaining that every physician with a good home record should, on presenting his certificate of this fact from his own state board, be allowed to undertake the practice of medicine in any state of his electing.

An Original Operation for Gastroptosis.

Dr. Henry D. Beyea, Philadelphia, detailed "The Elevation of the Stomach in Gastroptosis by the Surgical Plication of the Gastrohepatic and Gastrophrenic Ligaments. An Original Operation." He had devised and practiced the following operation: The abdomen was opened midway between the xiphoid

cartilage and umbilicus by an incision three inches in length. Three rows of interrupted silk sutures were placed from above downward and from right to left through the gastrohepatic ligament or omentum and gastrophrenic ligament. When secured these sutures formed a broad transverse fold or plication in and shortened these ligamentary supports and elevated the stomach to normal position. Two subsequent operation have been done, and since the description of the first case, Bier of Greiswald, Ga., 1900, has reported four cases similarly operated on with slight change. Six of the 7 cases have been observed from 65 days to 3 years and in every case improvement in health had been very remarkable and the relief of the symptoms complete. The danger of the operation, with the best aseptic and antiseptic technic, is estimated at 0.25 per cent.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Rheumatism.

Rheumatism is a disease characterized by fever and an inflammatory involvement of the synovial membranes of joints; most frequently the knee, shoulder or ankle. However, the tendency to the development of endocarditis or pericarditis should always be borne in mind. Endocarditis is a complication so frequently occurring that the heart should be examined each time the patient is seen.

INDICATIONS FOR TREATMENT.

Yeo formulates the following general and symptomatic indications for the treatment of this affection:

1. To lessen the local articular inflammation and severe pain by rest and pain-relieving remedies.
2. To modify and change, if possible, the morbid state of the blood and other fluids.
3. To protect the heart as far as we possibly can, from serious and permanent injury.
4. To take suitable measures to immediately reduce hyperpyrexia should it arise.
5. To guard against the tendency to relapses by careful supervision during convalescence.

The first of the foregoing indications can be carried out by giving the patient absolute rest in bed, not even permitting the patient to leave his bed to evacuate either the bowels or the bladder.

FOOD AND DRINK.

To meet the second indication, the diet will have to be regulated and restricted. While the fever lasts and the acute symptoms are present, the patient should be put on and confined to a liquid diet. In the greater per cent. of these cases, the diet should consist of milk alone. It is not unusual, however, to find patients who can not take milk; in these cases, soups, broths, gruel and clam-broth may be substituted.

Patients troubled with rheumatism have almost a constant craving for the acid and cold drinks. Water, of course, should be given freely, pure or in the form of seltzer or lithia water. Yeo recommends a nutritious preparation made as follows: Take a jug containing a pint of milk diluted with a pint of boiled water, and containing 30 or 40 grains of sodium bicarbonate and 10 or 20 grains of sodium chlorid, cooled by a lump of ice; it should be kept near the patient and a tumblerful given him frequently. Another jug should contain a decoction of lemons, made by roughly tearing a lemon to pieces and boiling it for ten minutes in a pint of water, and straining and then adding 20 to 30 grains of potassium bicarbonate, and some ice to cool it. This may be freely drunk at intervals between the milk. Whey may be substituted for the milk if the latter should by chance disagree with the patient. If broths are given they must be free from fat, otherwise decomposition may take place in the stomach and tend to make the stomach sour. Alcoholic beverages should be avoided except where conditions and complications demand them.

In prolonged cases some animal food may be given consisting of light meats, such as chicken or turkey, and occasionally a small amount of beef. Some authors state, however, that no meat or fish should be given for at least a week after the subsidence of the fever, and even then meat may cause a relapse. When convalescence has become established, Thompson recommends eggs, fish, oysters, and the white meat of broiled or roasted chicken and one or two such vegetables as asparagus, spinach or stewed celery, with a baked apple or fresh fruits, but sweets should be avoided.

LOCAL TREATMENT.

Beside rest in bed and absolute immobility of the affected joints, which may be accomplished by placing the limb in splints, local treatment may be resorted to in order to reduce the inflammation and relieve the pain. This is accomplished by wrapping the joints with cotton wool or flannel after applying the following formula as recommended by Dr. Fuller in *Applied Ther.:*

℞.	Tinct opii	ʒi	30
	Pot. carbonatis	ʒss	15
	Glycerini	ʒii	60
	Aquæ	ʒix	270

M. Sig.: To be applied locally to the inflamed joints on lint, or the following combination containing ichthyol may be applied:

℞.	Ichthyol	ʒss-ʒi	15-30
	Glycerini	ʒss	15
	Adipis	ʒii	60

M. Sig.: Apply to the affected part with friction.

Bamberger, in *Clinical Ther.*, recommends the following, locally:

℞.	Olei sinapis	m. xii	75
	Spts. terebenthinæ	ʒvi	24
	Linimenti saponis	ʒvi	24

M. Ft. Linimentum. Sig.: Apply locally.

The following combinations are recommended by *Meerk's Archives* for local application:

℞.	Acidi salicylici	ʒiss	6
	Lanolini	ʒv	20
	Olei terebenthinæ	ʒiss	6
	Petrolati	ʒv	20

M. Sig.: Apply locally and wrap the joints in flannel; or:

℞.	Salol	ʒi	4
	Menthol	gr. xxiv	1 60
	Ichthyol	ʒi	4
	Lani	ʒi	30

M. Sig.: Anoint the painful joints two or three times daily; or:

℞.	Olei gaultheriæ	ʒi	4
	Acidi salicylici	ʒss	2
	Guaiacol	ʒi	4
	Lani	ʒi	30

M. Sig.: Apply several times a day; or:

℞.	Ichthyol	ʒiv	16
	Ext. belladonnæ	ʒi	4
	Ext. opii	gr. xxx	2
	Lani	ʒi	30
	Adipis benzoinati	ʒi	30

M. Sig.: Rub in well and apply about the inflamed part on lint.

INTERNAL MEDICATION.

Experience has demonstrated to the general practitioner that the salicylates and their derivatives tend to diminish the cardiac complications by diminishing the severity of the attack and shortening its duration. Salicylic acid is not so frequently prescribed because of its insolubility. It may be dissolved by mixing it with ammonium acetate or potassium citrate. It is recommended by Yeo as follows:

℞.	Acidi salicylici	gr. xx	1 30
	Potassii citratis	gr. xl	2 66
	Aq. destil, q. s. ad	ʒi	30

M. Sig.: Two teaspoonfuls in half a glass of water four times a day. The dose may be increased according to the age of the patient and the severity of the attack.

Salicylic acid may be prescribed in the pill form as follows:

℞ Acidi salicylici ..... gr. c 6 | 65
Gummi acaciæ ..... gr. xv 1 |
Mucilaginis, q. s. ad.

M. Ft. pil. No. xxx. Sig.: One to be taken every hour until buzzing of the ears occurs, then one every four hours.

The sodium salt, when given, should be given well diluted with water or milk and if given in the capsule form the patient should be instructed to drink half a glass of water or milk after each dose.

It can be given in solution combined as follows:

℞ Sodii salicylatis ..... ʒiv 16 |
Sodii bicarb. ..... ʒii 8 |
Aq. menth. pip., q. s. ad ..... ʒiii 90 |

M. Sig.: One teaspoonful in water four times a day; or:

℞ Sodii salicylatis ..... ʒii 8 |
Syr. zinziberis ..... ʒvi 24 |
Aquæ, q. s. ad ..... ʒiv 120 |

M. Sig.: One tablespoonful in water every three or four hours.

In prescribing the salicylic acid, sodium borate may be combined with it to increase its solubility, as follows:

℞ Acidi salicylici ..... ʒiii 12 |
Sodii boratis ..... gr. xl 2 | 66
Glycerini ..... ʒi 30 |
Aq. menth. viridis, q. s. ad ..... ʒiv 120 |

M. Sig. One to two teaspoonfuls every three hours in water.

Alkalies are of great service to increase elimination and to counteract the acidity, given as follows:

℞ Potassii bicarb. ..... ʒiv 16 |
Pot. nitratis ..... ʒiss 6 |
Liq. ammon. acet. ..... ʒii 60 |
Aq., q. s. ad. ..... ʒiv 120 |

M. Sig.: Two teaspoonfuls in water every four hours.

The alkalies may be combined with cinchona, as follows:

℞ Sodii bicarb. ..... ʒi 30 |
Pot. acetatis ..... ʒv 20 |
Tinct. cinchonæ ..... ʒi 30 |
Tinct. card. comp., q. s. ad. ..... ʒiv 120 |

M. Sig.: Shake and take one teaspoonful every four hours in water.

Salicin has been of service in rheumatism given in combination as follows:

℞ Salicini ..... ʒi 4 |
Pot. bicarb. ..... |
Sod. bicarb., ää ..... ʒiss 6 |

M. Ft. chartulæ No. x. Sig.: One powder every three hours dissolved in hot water or hot milk.

Aspirin, a more recent preparation, is a very valuable substitute for the salicylates salol or salophen, and its action being similar it may be classified in this group. It may be prescribed as follows:

℞ Aspirin ..... ʒiss 6 |
Ext. nucis vom. ..... gr. v | 30

M. Ft. capsulæ No. xii. Sig.: One capsule every four hours.

TREATMENT OF THE CHRONIC FORM.

In the treatment of the chronic form of articular rheumatism the iodid preparations should replace the salicylates. Colchicum, given in the form of the wine, is a valuable remedy if a reliable preparation can be obtained. Too often this preparation is made up by the druggist from the worthless seed or root and the practitioner is consequently disappointed in the results obtained. The gaultheria preparations are unreliable for the same reasons. The iodids and colchicum can be given combined, as follows:

℞ Sodii iodidi ..... ʒiii 12 |
Vini colchici sem ..... ʒiii 12 |
Spiritus gaultheriæ, q. s. ad. ..... ʒiv 120 |

M. Sig.: One teaspoonful in water after each meal.

The oil of wintergreen is recommended in combination with sodium iodid, as follows:

℞ Pot. iodidi ..... ʒiiss 10 |
Liq. pot. arsenitis ..... ʒiss 6 |
Olei gaultheriæ ..... ʒiss 6 |
Spts. gaultheriæ, q. s. ad. ..... ʒiv 120 |

M. Sig.: One teaspoonful after each meal, in water.

HYPERPYREXIA.

Bathing should be resorted to in order to reduce the hyperpyrexia in the acute attacks. This may be accomplished by repeated wet packs. By this method slow abstraction of heat takes place and by allowing the patient to remain in the pack for a considerable length of time sweating is produced. If the temperature is not properly reduced in this way, then a cold sponge should be ordered, as in other infectious diseases.

Medicolegal.

SOME OHIO AND NEW JERSEY LEGISLATION OF 1902.

New Jersey—Investigation of Mosquito Problem.—Chapter 98 of the New Jersey Laws of 1902 empowers and directs the New Jersey Agricultural Experiment Station to investigate and report on the mosquitoes occurring within the state, their habits, life history, breeding-places, relation to malarial and other diseases, the injury caused by them to the agricultural, sanitary and other interests of the state, their natural enemies, and the best methods of lessening, controlling or otherwise diminishing the numbers, injury or detrimental effect on the agricultural, sanitary and other interests of the state. To carry out this provision an appropriation of $10,000 is made.

Ohio—Relief of Benevolent and Charitable Hospitals.—On page 644 of the Laws of Ohio of 1902 is an Act which provides that in any county in the state, except in counties containing hospitals supported by public funds, in which is operated, by any corporation or association of persons, a hospital organized or incorporated for purely charitable purposes, in which all the indigent poor of the county requiring the same shall receive medical and surgical treatment free of charge, the county commissioners of such counties may, in their discretion, pay to such hospital association, out of the county poor fund, a sum not to exceed $2500 per year, payable on the first day of January and July, in equal payments, for the maintenance and support of such indigent poor so requiring such treatment, and the reimbursement of such organization so operating such hospital. Provided that nothing in this Act shall be held to authorize the payment of public funds to any sectarian institution.

Ohio—Prohibiting Leaving Samples of Medicine.—On page 146 of the Laws of Ohio of 1902 is an Act which provides that any person who shall by himself, his servant or agent, or as servant or agent of any other person, leave, throw or deposit on the doorstep or premises owned or occupied by another, or who shall deliver to any child under fourteen years of age, any patent or proprietary medicine, or any preparation, pill, tablet, powder, cosmetic, disinfectant or antiseptic, or any drug or medicine that contains poison, or any ingredient that is deleterious to health, as a sample, or in quantity whatever for the purpose of advertising, shall be deemed guilty of a misdemeanor. The terms used in this Act shall include all remedies for internal or external use, either in broken packages or bulk, simple, mixed or compounded. Whoever violates the provisions of this Act shall be guilty of a misdemeanor, and on conviction shall be fined not exceeding $100, nor less than $25, or imprisoned not exceeding 100 nor less than 30 days, or both, for each and every violation.

New Jersey—Tuberculosis Sanatorium.—Chapter 126 of the New Jersey Laws of 1902 provides for the establishment of an institution to be known as "The New Jersey Sanatorium for Tuberculous Diseases." The sanatorium shall be governed by a board of eight managers, each of whom shall be a resident of this state, not more than four of whom shall belong to any one political party, and not less than four of whom shall be physicians in good standing. Among the powers of the board of managers are to appoint a superintendent who shall be a well-educated physician and to appoint, on the nomination of the superintendent, such stewards, matrons, assistant physicians and nurses, as the board may from time to time deem necessary or proper. Any person who has been a resident of this state

for at least one year continuously next preceding the application for his or her admission to said sanatorium, and who is in indigent circumstances, may be admitted into said sanatorium and treated therein, without cost, subject to such rules and regulations as the board of managers may from time to time prescribe.

Ohio—Restricting Selling or Giving Away of Cocain.—On page 145 of the Laws of Ohio of 1902 is an Act which provides that whoever sells, barters or gives away any quantity of cocain, except on the prescription of a physician, duly licensed under the laws of the State of Ohio, or sells, barters or gives away any quantity of cocain to any person or persons without having first marked the word "poison" on the label or wrapper containing the same, and registered in a book to be kept by him or her for that purpose, the day and date on which it is sold, bartered or given away, the name and address of the physician who prescribed the same, the quantity thereof, the name, age, sex and color of the person obtaining the same, the purpose for which it is required and the name and place of abode of the person or persons for which the same is intended, shall be fined not more than $500 nor less than $50. But the provisions of this Act do not extend to any person, persons, firm or corporation engaged in selling drugs and medicines at wholesale to sell any quantity of cocain to another person, persons, firm or corporation engaged in selling drugs or medicines at wholesale or retail, in accordance with the laws governing such business.

Ohio—Practice of Medicine.—Section 4403*f* of the Revised Statutes of Ohio is amended by an Act on page 212 of the Laws of Ohio of 1902 providing that any person shall be regarded as practicing medicine or surgery or midwifery within the meaning of this Act who shall use the words or letters, "Dr.," "Doctor," "Professor," "M.D.," "M.B.," or any other title, in connection with his name, which in any way represents him as engaged in the practice of medicine or surgery or midwifery, in any of its branches, or who shall prescribe, or who shall recommend for a fee for like use any drug or medicine, appliance, application, operation or treatment, of whatever nature, for the cure or relief of any wound, fracture or bodily injury, infirmity or disease. The use of any of the above mentioned words or letters, or titles in such connection, and under such circumstances as to induce the belief that the person who uses them is engaged in the practice of medicine or surgery or midwifery in any of its branches, shall be deemed and accepted as prima facie proof of an intent on the part of such person to represent himself as engaged in the practice of medicine or surgery or midwifery. The exceptions, when and to whom this Act shall not apply, are the same as before, with some added provisions as to osteopaths.

New Jersey—Provisions for Contagious Diseases.—Chapter 120 of the Laws of New Jersey of 1902 is an Act to authorize two or more municipalities in this state to jointly establish and maintain hospitals for contagious and infectious diseases, and contracts may be made thereafter with other municipalities to use the same. Chapter 192 authorizes the establishment and maintenance of isolation hospitals in connection with poorhouses. Chapter 130 provides that whenever, within the limits of the territorial jurisdiction of any local board of health of this state, there shall be any person or persons suffering from any contagious, infectious or communicable disease, it shall be lawful for the State Board of Health, if it shall deem it necessary or prudent so to do, to cause a notice in writing, signed by the secretary of said board, to be sent to such local board requiring it to take such action for the restriction of the spread of such contagious, infectious or communicable disease, within such time as the said state board by said notice may specify, and if such action shall not be taken by such local board within the time specified in such notice, then it shall be lawful for the state board to apply to the Supreme Court for a writ of mandamus to compel such local board to take such action. Chapter 225 provides that the State Board of Health, any county board of health and any local board of health, or a majority thereof shall have power to remove, or cause to be removed from any hotel, boarding house, boarding school or other building of like character, tenement or apartment houses, to a proper place designated by such board, persons sick with any contagious, infectious or pestilential disease, and such boards shall also have power to remove, or cause to be removed to a proper place to be so designated, all things and articles within the jurisdiction of such boards, which, in their opinion, shall be infected with any matter likely to communicate disease to the inhabitants of any county or other municipality of this state, and said boards may destroy, or cause to be destroyed, such articles and things, when in their opinion the safety of the public health requires it; provided, however, that no person shall be removed under this Act, except after examination and determination by two physicians in good standing and practice, that such person is sick with a contagious, infectious or pestilential disease. The boards of health above mentioned may, by resolution, delegate the authority herein conferred to any medical inspector in the employ of such boards.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal, September 20.

1 *The Plague; Its "Diffusive Tendency"; Haffkine's Antiplague Virus vs. Dr. Yersin's Serum. James Drummond Burch.
2 *The Radical Treatment of Cancer of the Penis. Edward W. Lee.
3 Perforating Ulcers of the Duodenum. (To be concluded.) John B. Murphy and J. M. Neff.
4 Complications in the Passage of a Gallstone. (Continued.) Neil MacPhatter.

Medical Record (N. Y.), September 20.

5 *Hysteria and Organic Disease; A Study of the Diagnosis with Reports of Cases. Charles L. Dana.
6 *The Family Physician of the Past, Present and Future. S. A. Knopf.
7 A Gunshot Wound of the Abdomen, Inflicting Nineteen Perforations of the Intestines and Four Lacerations of the Mesentery, with Recovery. Robert F. Amyx.
8 *Nasal Disturbances in Typhoid Fever and Their Sequelæ. Max Toeplitz.
9 Diagnosis and Pathology. M. P. Overholzer.

Medical News (N. Y.), September 20.

10 *The Modern Treatment of Fractures of the Lower End of the Radius, as Indicated by the Roentgen Rays. Carl Beck.
11 *Phototherapeutic Apparatus. Milton Franklin.
12 *The Present Status of Cancer: Its Etiology and Pathology; The Value of Laboratory Research. Edward N. Liell.
13 Report of a Case of Non-Traumatic Acute Suppurative Osteomyelitis, with Catarrhal Coxitis, with Remarks. Henry I. Raymond.

Boston Medical and Surgical Journal, September 18.

14 *Notes on a Case of Acute Hemorrhagic Polymyositis. William S. Thayer.
15 *The Effects of Exercise on the Heart and Circulation. R. C. Larrabee.
16 *Suprapubic Cystotomy, without Distending the Bladder. Samuel Crowell.
17 A Case of Neuritis in the Course of Diabetes. F. H. Packard.

Philadelphia Medical Journal, September 20.

18 Sanitation at Atlantic City. Henry Leffmann.
19 *A Clinical Lecture on a Case of General Tuberculosis. W. Hale White.
20 *Medical Representation in Hospital Management. Augustus A. Eshner.
21 Preservative Solutions for Gross Specimens. Randle C. Rosenberger.
22 Syphilitic Necrosis of the Nasal Cavity, Accompanied with Total Blindness. Charles A. Todd.

American Medicine (Philadelphia), September 20.

23 *The Rational Basis for the Dietetic Treatment of Tuberculosis. William H. Porter.
24 *The Differential Leucocyte Count in the Newborn. Louis M. Warfield.
25 Two Aneurysms in a Single Heart. L. M. Loeb.
26 *The Excision of Cancer of the Rectum. Lewis H. Adler, Jr.
27 Uterus Bicornis Unicollis, with Ovarian Abscess and Pelvic Hematocele. William Hessert.
28 *Chronic Contraction of the Prostatic Fibers Encircling the Vesical Neck; Report of a Case. J. B. Shelmire.
29 Organization and Ethics, or Ways and Means. P. Maxwell Foshay.
30 Medical and Surgical Notes from Asia. Nicholas Senn.

Cincinnati Lancet-Clinic, September 20.

31 *Clinical and Pathological Consideration of Burns. A. Ravogli.
32 *The X-Ray and Trikresol in Alopecia Areata. M. L. Heidingsfeld.

St. Louis Medical Review, September 20.

33 Virchow as a Pathologist. Hugo Summa.
34 Virchow as a Public Man. F. J. Lutz.

Medical Age (Detroit, Mich.), September 10.

35 *Pathologic Conditions Causing Abortion and Premature Labor, with Report of Cases. Francis A. Webb.
36 *Adrenalin in Urological Practice. A. von Frisch.
37 Fibroid Tumors and Pregnancy. Louis Frank.

Journal of Mental Pathology (N. Y.), July.

38 Definition of Progressive Paralysis; Its Differentiation from Similar Forms of Disease. Vladimir Tschisch.
39 The Study of Psychiatry of To-day—Of What Should It Consist? Louise G. Robinovitch.

Washington Medical Annals, September.

40 *The Causes of Cancer. Robert Reyburn.
41 Two Cases of Ligation of Carotid Artery for Inoperable Malignant Growth. Arthur A. Snyder.
42 Case of Sarcoma of Knee. George T. Vaughan.
43 Case of Acute Pemphigus. Samuel S. Adams.
44 Medical Evolution. Jos. T. Howard.
45 Case of Congenital Stenosis of Pulmonary Valve. D. S. Lamb.
46 Case of Sarcoma at the Knee. V. B. Jackson.
47 Two Cases of Typhoid Fever. D. S. Lamb.
48 Case of Aneurism of Abdominal Aorta. G. N. Acker.
49 An Electric Lamp for Examining the Cavities of the Body. R. S. Lamb.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), September.

50 *Possible Aid to the Discovery of the Tubercle Bacilli in Urine. J. P. Bryson.
51 *Cutaneous Sarcoid. William S. Gotthell.
52 A Case of Hyphomycetic Granuloma of the Skin. Jay F. Schamberg.
53 *An Instrument to Diagnosticate Hydrocele. Frederic Griffith.

Brooklyn Medical Journal, September.

54 History of the Ambulance System in Brooklyn, N. Y. W. Schroeder.

Canada Lancet (Toronto), September.

55 Chronic Intestinal Obstruction by Banus as a Sequel of Appendicitis; Operation; Recovery. A. Primrose.
56 Cesarean Section, Coelihysterotomy, Gastrohysterotomy. N. E. MacKay.
57 A Case of Hernia of the Bladder. E. R. Secord.
58 A Plea for the Surgical Treatment of Appendicitis. D. Cowles Vanwart.

Annals of Surgery (Philadelphia), September.

59 *On the Avoidance of Shock in Major Amputations by Cocainization of Large Nerve-Trunks Preliminary to Their Division. Harvey Cushing.
60 *Subparietal Rupture of the Kidney. Thomas A. Davis.
61 The Results of Wounds of the Large Joints made by Modern Military Projectiles. Charles B. Nancrede.
62 *Removal of the Superior Cervical Ganglion for the Relief of Glaucoma, with Report of a Case. Colman W. Cutler and Charles L. Gibson.
63 Note on Synchronous Ligation of Both Internal Jugular Veins. J. F. Baldwin.
64 Operative Treatment of Exophthalmic Goiter. Emmet Rixford.
65 Avulsion of the Brachial Plexus, with a Report of Three Cases. Algernon T. Bristow.
66 Note on Permanent Suprapubic Drainage for Advanced Tuberculosis of the Bladder. Charles A. Powers.
67 *Anatomical and Technical Reasons Why the Perineal Is Preferable to the Suprapubic Route in Prostatic Surgery. James E. Moore.

The Post-Graduate (N. Y.), September.

68 A Contribution to the Treatment of Nephroptosis Associated with Enteroptosis. Forbes Hawkes.
69 Incontinence of Urine in the Female. Charles F. Adams.
70 Poisoning. Robert Langerhans.

Hot Springs Medical Journal, August 15.

71 Notes on Unguentum Crede. I. L. Van Zandt.
72 Past, Present and Future Medicine. William F. Barclay.

Interstate Medical Journal (St. Louis), September.

73 *The Etiology of Prostatic Hypertrophy. G. Frank Lydston.
74 *Suspension of the Uterus. E. J. Neville.
75 Nasal Diseases and Obstructions as a Cause of Laryngitis, and Methods for Relief of Same. W. B. Shields.
76 Three Cases of Tinea Circinata in Adults. William P. Loth.

Journal of Eye, Ear and Throat Diseases (Baltimore), July-August.

77 Subconjunctival Injections in Diseases of the Eye. E. E. Gibbons.

Dominion Medical Monthly (Toronto), September.

78 How Much Ophthalmology Should a General Practitioner Know?—With Special Reference to the Discovery of the Cause of Headaches. J. T. Duncan.
79 Where Can Our Consumptive Patients Best Be Treated? J. H. Elliott.
80 Pneumonia. David Hoig.

American Gynecology (N. Y.), August.

81 *Appendicitis and Pelvic Disease. Reuben Peterson.
82 *A Further Contribution to the Study and Practical Significance of Lactation Atrophy of the Uterus. Hiram N. Vineberg.
83 *Technique, Indications and Limitations of Vaginal Section and Drainage for Pelvic Disease. Thomas J. Watkins.
84 Rupture of the Posterior Wall of the Cervix Uteri without Involvement of the External Os, Occurring During Abortion at the Fourth Month; Escape of the Fetus Through the Laceration. Wm. H. Weir.
85 Lacerations of the Cervix Uteri and Pelvic Floor—A Plea for Their More Careful Study, Their Diagnosis and Treatment. Walter L. Burrage.
86 The Advantages, Disadvantages and Results of Suspension of the Uterus. Hunter Robb.
87 *Treatment of Placenta Previa, Based upon a Study of 30 Cases. Joseph B. DeLee.
88 *Resuturing the Suppurating Abdominal Incision. Philander A. Harris.
89 Report of a Case of Splenectomy for Wandering Spleen, Complicated with Typhoid Fever; Recovery. Thomas A. Ashby.

Medical Herald (St. Joseph, Mo.), September.

90 The Suicidal Folly of Self-Drugging. C. H. Hughes.
91 The Diagnosis and Prognosis of Endocardial Murmurs. W. F. Milroy.
92 The Early Care of the Mentally Deranged, the Duty of the State and Private Hospitals to Such Wards. J. M. Barstow.

Merck's Archives (N. Y.), September.

93 Hydrastis Canadensis and Its Alkaloids. J. M. French.
94 The Diuretic Action of Teobromine Derivatives. D. DeBuck.
95 An Index of Diseases, Alphabetically Arranged, with Their Modern Treatment. (Continued.) G. Bjorkman.
96 Sodium Glycocholate in Diseases of the Liver. T. W. Keown.

Therapeutic Gazette (Detroit, Mich.), August 15.

97 *The Employment of Digitalis and Aconite in the Treatment of Cardiac Disease. H. A. Hare.
98 *Report of a Case of Alcoholism Treated with Hyoscine Hydrobromate. R. E. Bering.
99 *Malignant Edema of Both Hands; Recovery without Amputation, Due to the Constant Application of Acetozone. Murdoch Chisholm.
100 Apomorphine in Puerperal Convulsions. T. Neal Kitchens.
101 Saline Infusions, and Their Administration for Meningeal Symptoms in an Infant. Alfred Gordon.
102 Membranous Croup or Diphtheritic Laryngitis. Samuel A. Visanska.
103 *Antagonisms of Cocain and Morphin, Especially Their Actions upon General Metabolism, and the Employment of Cocain in Morphin Poisoning. Edward T. Reichman.

Vermont Medical Monthly (Burlington), August 25.

104 Dislocation of Hip During Normal Labor. L. B. Newton.
105 Posterior Pudendal Hernia, with a Report of Two Cases Complicating Pregnancy. C. W. Milliken.
106 Sanatoria for Persons Afflicted with Tuberculosis. W. N. Platt.

Buffalo Medical Journal, September.

107 *The Early Diagnosis of Pulmonary Tuberculosis. Silvio von Ruck.
108 Experiences in the Philippine Islands. W. P. Kendall.
109 *Congenital Pulmonary Stenosis. (Concluded.) J. Burke.
110 Cancer of the Clitoris. Charles E. Congdon.

Atlanta Journal-Record of Medicine, September.

111 The Problems That Interest Motherhood. Mrs. W. H. Felton.
112 The Relation of Alcoholism to Insanity, Pauperism and Crime. Daniel R. Brower.
113 Defects of Vision or of Hearing in Relation to the Development of Children. A. W. Stirling.
114 Malaria and Pregnancy. A. B. Greiner.
115 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

Journal of Nervous and Mental Diseases (N. Y.), September.

116 *A Contribution to the Radical Cure of Exophthalmic Goiter, with the Ultimate Results in Eight Cases Treated by Thyroidectomy. J. Arthur Booth.
117 *Acute Hemorrhagic Cortical Encephalitis. Herman H. Hoppe.
118 Paramyoclonus Multiplex; Report of a New Case, with Further History of a Case Reported in 1896, Which Has Since Recovered. F. W. Langdon.

Canadian Journal of Medicine and Surgery, September.

119 Operative Treatment of Ascites Due to Cirrhosis of Liver, by Implantation of the Omentum into the Abdominal Wall. G. A. Peters.
120 Cerebrospinal Meningitis. A. McPhedran.
121 Treatment of Painful Growths, Malignant and Non-Malignant, by the Hypodermic Use of Thiosinamin. J. F. Macdonald.
122 Technique of the Removal of Tubercular Cervical Glands. L. W. Cockburn.
123 Notes from the Operating Theaters of London. F. Winnett.
124 Indications for, and Technique of Operation for Nephroptosis. A. H. Goelet.

Journal of the Michigan State Medical Society (Detroit), September.

125 The Michigan Medical Society; Its First Eighty-three Years, Present Wants, and Suggestions for Their Supply. Learius Connor.
126 Surgical Advantages. Angus McLean.
127 Etiology of Kidney Disease. Mortimer Willson.
128 Diagnosis of Diseases of the Kidneys. John E. Clark.
129 Uremic Complications in Diseases of the Kidneys. John McLurg.
130 Ocular Manifestations of Nephritis. Walter R. Parker.
131 *The Cerebral Complications of Kidney Disease. Irwin H. Neff.
132 Treatment of Diseases of the Kidneys. Joseph B. Whitney.

Medical and Surgical Monitor (Indianapolis), September 15.

133 The Diagnosis and Treatment of Incipient Tuberculosis. Louis Flaschbein.
134 Femoral Hernia, Complicated by Adhesion, Strangulation, Necrosis and Perforation—Anastomosis Operation and Recovery. C. A. Butler.
135 The Influence of the Physician's Wife upon His Professional Success. Walter N. Thompson.

136 The Mineral Springs of Indiana. George T. Palmer.
137 Circumcision. S. H. Malpas.

Texas Medical News (Austin), August.

138 Appendicitis—Its Diagnosis and Treatment. J. C. Van Nuys.
139 Some Severe Stomach Troubles. J. W. Torbett.
140 A Case of Malignant Pustule Treated with Carbolic Acid. A. Malsch.
141 Yellow Fever Quarantine. M. M. Pool.

New England Medical Monthly (Danbury, Conn.), September.

142 Autobiography of the Late J. Milner Fothergill, M.D., London, Eng. (Continued.)
143 A Few Notes on Uric Acid. D. M. Gibson.
144 Summer Diarrhœas of Children and Their Treatment. M. A. Auerbach.
145 Ergoapiol (Smith) in Diseases of the Female. Charles H. Sheppard.
146 Local Treatment of Skin Lesion in Smallpox. O. Henley Snidor.

Medical Times (N. Y.), September.

147 Study of the Various Phases of Digestion. Wm. Wormley.
148 The Researches into the Cause of Addison's Disease. M. Shellenberg.
149 The Use of Electricity in Nervous Depression and Paralysis. Charles B. Barrett.
150 The Maintenance of Cardiac Compensation. G. R. Johnson.
151 The Efforts Made to Discover the Nature of Cancer. A. M. Leonard.
152 Significant Symptoms in General Paresis. M. E. Fitch.

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1. **The Plague.**—Burch gives an illustrated article advocating the use of Haffkine's serum as a plague prophylactic, quoting authorities and otherwise showing its utility. He finds evidence that possibly does not support the idea promulgated by authorities that Haffkine's inoculations are dangerous in the incubative period, and quotes a letter from Haffkine stating that while the idea seems reasonable it is in opposition to well-known facts.

2. **Cancer of the Penis.**—Lee believes that this is in many cases developed by irritating secretions, filth, trauma, and neglected venereal ulcers, and that recurrence is the rule unless total extirpation has been resorted to. He thinks that no matter whether cancer is hereditary or not, it is well to check the procreative power of the individual, and this is done by total extirpation. He describes the operation as follows: The patient should be placed in the extreme lithotomy position and the pendent portion of the organ wrapped in gauze saturated in carbolized solution, over which is placed rubber tissue. "The penis should be transfixed as near to the root as possible with two straight short needles, on the principle of Wyeth's hip-joint operation; under the needles should be placed a rubber band; then the pendent portion of the penis should be amputated by a transverse division." By this procedure you will have removed all the diseased tissue in the pendent portion and prevented the spread of infection to the healthy tissue. The skin of the scrotum is then incised along the whole length of the raphe; with the finger and the handle of a scalpel, the scrotum is separated into halves quite down to the corpus spongiosum; a full-sized metal catheter is now passed into the urethra as far as the triangular ligament. In passing the catheter it will be necessary to remove the rubber band, which has been placed at the root of the penis, sufficiently to permit the passage of the catheter. A knife is now inserted transversely between the corpora cavernosa and the corpus spongiosum; the catheter having been withdrawn, the urethra is cut across and the deep end of the urethra is then detached from the penis quite back to the triangular ligament. An incision is then made around the root of the penis continuous with that in the median line; the suspensory ligament is divided and the penis is separated, except at the attachment of the crura. The knife is now laid aside, and with a stout periosteal elevator each crus is detached from the pubic arch. This step of the operation involves some length of time on account of the very firm union of the parts to be severed. Four arteries require ligature—the two arteries of the corpora cavernosa and the two dorsal arteries. The corpus spongiosum is slit up for about half an inch and the edges of the divided urethra are stitched to the back part of the incision in the perineum. The scrotal incision is then closed with sutures and a drainage tube is inserted so far back in the deep part of the wound that it can be brought out in front and behind. No catheter is retained in the urethra. The paper is illustrated.

5. **Hysteria.**—The main objective symptoms of hysteria are grouped by Dana under five heads: the anesthesias, contractures, palsies and tremor, the attacks and the peculiar mental state. The syndrome is most often associated with the traumatic organic lesions, but may appear also with various brain and spinal troubles and more rarely with inflammatory diseases of the nerves. The anesthesias are the most mobile and amenable to remedial measures. The paralyses indicate a deeper and more stable affection, and practically are always associated with anesthesia, often with tremor, and show a much greater tendency to become fixed. The contractures may be fugacious and irregular, like anesthesias, in the so-called contracture diatheses, but in the severer types they are often more distinct and difficult to manage than the paralyses. The mental state of the hysterical is the most profoundly established of all; it is inherent in the mental make-up of the individual. He classifies the anesthesias as unilateral and segmental, though often combined. It is only in hysteria that we have complete anesthesia. The paralyses are usually easily recognized, the general character of the hemiplegia and absence of face involvement and lessened reflexes is well known. The retention of superficial reflexes which are absent or modified in organic hemiplegias, is a point well insisted upon. Hysterical paraplegia, he thinks, is rare, though he does not deny its existence; the paralyses are usually mono- and hemiplegias. The contractures are often puzzling; they come on suddenly without pain or exaggeration of reflexes, no morning relaxation and there is active resistance to reduction. Occasionally they may be associated with pain and be free from characteristic anesthesia. The mental symptoms are varied, including subconscious acts, fixed ideas, amnesias, etc. There is a kind of dementia, mental enfeeblement with mental depression, underlying the mental inactivity and lack of interest. This does not refer to the ordinary hysterical woman, who is usually only a very emotional, selfish, and very foolish creature. The attacks, or crises of hysteria, are, of course, characteristic enough phenomena, but are relatively uncommon in major hysteria. In the diagnosis of hysteria the anesthesia is the most certain criterion, and the paralyses are usually admitted as good helps. The contractures and tremor are more puzzling, but the associated symptoms clear them up. The mental state is generally recognized, when it shows a sharp differentiation from the ordinary condition. The anesthesia of hysteria without much or any paralysis, is usually curable. Profound paralysis is much more serious. The mental state is the worst of all to readjust. He reports cases in full detail.

6. **The Family Physician.**—Knopf's article discusses the relation of the family physician to the specialist and to the public. He thinks that the general family practitioner is not such an enviable person. The remuneration is small compared with the labor, and this makes young men tend to specialties early in their career. He thinks the relation between the specialist and the general practitioner can be improved if the after-care, for instance, of surgical cases were considered as more a part of the surgery and remunerated accordingly, and there is much which the consultant and surgeon or clever specialist can do to bring up the standing of the family physician. As regards public hygiene, he believes the family physician has an important function. One positive conclusion he has arrived at is that the tuberculosis problem never will or can be solved without his help. The amount he can do also as a sanitarian is dilated upon. He summarizes his conception of the family physician of the future as follows: "The family physician of the future will be the cultured, refined gentleman, who through his college training has been duly prepared for the great profession he has chosen to follow. A five-years' course in a medical college not owned or controlled by a private corporation, but by an endowed independent university or State institution, and an additional year of obligatory general hospital training will have fitted him to be a sanitarian, a skilful physician, a trained general surgeon, wise enough to know when council is needed; a physician to be engaged by a number of private families among the well-to-do or by the government

as a guardian of health of a certain number of indigent families. In both cases his remuneration should be large enough, so that he can perform his duties without worry for his daily bread. Leisure and opportunities should be at his disposal, to follow occasionally some special scientific pursuits, if he is so inclined."

8. **Nasal Disturbances in Typhoid.**—The nasal disturbances in typhoid are, according to Toeplitz, drying of the mucous membrane, abrasions of the epithelium, erosions, particularly at the anterior portion of the septum, with occasional, frequently intense and dangerous bleedings. The erosion develops at times into an ulceration, and leads finally also to perforation of the septum. On the other hand, it leads to adhesions with the opposite surface of the lower turbinated body and their sequelæ, which are illustrated by cases. The accessory cavities are liable to be involved. He refers to the literature for evidence of this fact. The respiratory tract also may be affected, particularly the larynx.

10. **Fractures of the Lower End of the Radius.**—Beck's article is an elaborate one and illustrated by numerous skiagrams, without which an intelligible abstract would be difficult; in fact, the paper is too detailed for abstract here and the reader is referred to the original.

11. **Phototherapeutic Apparatus.**—The requisites of a phototherapeutic apparatus to be serviceable are summed up as follows by Franklin: "1. It should be supplied with light by artificial means. 2. The lamp should be as powerful as the circumstances will permit, as no arrangement of lenses or reflectors will coax power out of a feeble lamp. 3. The lamp should be an electric arc using chemically-prepared electrodes calculated to produce a spectrum powerful in the ultraviolet. 4. All lamps of the incandescent principle, of whatever design, are to be avoided. 5. Condensing and collecting lenses should be as large as the nature of things will permit and should be made of rock-crystal or of some medium equally diaphanous to the chemical rays. 6. The cooling apparatus should consist of a layer of water containing no other substance, and sufficiently thick to absorb the greater proportion of the heat-rays. It should be enclosed in some kind of a vessel which will not interfere with the passage of the chemical rays. 7. The machine should be mounted in such a way as to enable the operator to adjust and turn it in any direction with the utmost degree of precision."

12. **The Present Status of Cancer.**—Liell reviews the various theories and researches on cancer and finds that the results in the treatment are as yet decidedly deficient though favorable in contrast to those of only a generation ago. The period of immunity from recurrence after radical operation is increasing and the percentage of apparent cures is greater. He only briefly mentions the use of the Roentgen rays, stating that it appears that the embryonic cells which largely compose the cancerous tissue are made up of unstable molecules more readily rearranged and even destroyed by this agency.

14. **Polymyositis Hemorrhagica.**—This disease is discussed, a case reported and special points in its course specially remarked on, namely, mildness of subjective symptoms of pain and of febrile manifestations, widespread cutaneous discoloration, crepitus in the deltoid muscle. The etiology is not specially elucidated by the case and the prognosis is one which Thayer says must be cleared up by further observations.

15. **Effect of Exercise on the Heart.**—The effect of severe exercise on the blood pressure and the dilatation of the heart are discussed at length by Larrabee, who summarizes that violent exercise causes changes in the blood pressure with temporary enlargement of the heart's area by dilatation or relaxation of the myocardium, and sometimes a fugitive murmur. The cause of the latter is not obvious. The chief result of training is hypertrophy. The abnormal results of exercise are dilatation, which is rare in healthy young men, especially if well trained, and as a result of habitual over-exercise, "irritable heart" and the other conditions associated with dilatation, hypertrophy or myocarditis and generally due in part to other predisposing causes.

16. **Suprapubic Cystotomy.**—Crowell advocates the non-distension of the bladder in suprapubic cystotomy and shows that the anatomic condition does not require it. The peritoneum is so loosely connected to the pubes and the top of the bladder that it can be pushed back and the bladder reached and entered without distending it, and at the same time without entering the abdominal cavity. He reports two cases to show that a flat and empty bladder can be opened quickly, easily, without injury to the peritoneum, and with perfect safety to the patient.

19. **General Tuberculosis.**—White's clinical lecture takes up the etiology of tuberculosis in children, and while he recognizes the possibility of direct heredity, referring to a case of undoubted fetal infection, he thinks it is practically negligible. He criticises the statistics as to the heredity, but admits that life insurance precautions in case of parental tuberculosis are justifiable. He thinks it quite possible that the child may inherit some lowered resistance and discusses the possibility of food infection, which he thinks may occur, but doubts the probability in the present case. He is not prepared to say that milk never produces tuberculosis. The diagnosis of acute miliary tuberculosis is discussed, and he remarks that for the first few weeks we can not make sure of the condition. When the physical signs appear the case is then often mistaken for acute bronchitis, but with a little care this should be avoided. The fact that the lungs are already sometimes emphysematous leads to error. Special points in the case reported are remarked on.

20. **Medical Representation in Hospital Management.**—Eshner believes that there should be a medical representation in hospital boards and refutes the arguments of opponents of this idea, showing that medical men are just as competent or more so, in fact, to manage hospital matters than laymen.

23. **Dietetic Treatment of Tuberculosis.**—Porter's paper is an elaborate one on the dietetic treatment of tuberculosis. He thinks certain foods should be avoided, such as fruits, either cooked or raw, all cereals and breakfast foods, nuts, sweets and pastry of all kinds, potatoes in all forms, onions, tomatoes, turnips, parsnips, carrots, celery, radishes, cabbage, egg- and oyster-plant, corn, etc.; pork in all forms, except occasionally a little crisp bacon and ham; rich gravies and all forms of soup are excluded. The principal reason for the exclusion of these are their disturbance of digestion. He summarizes his study in the following: "1. That a predisposition to tuberculosis is inherited. 2. That tuberculosis *per se* is never inherited, but is always acquired after birth. 3. The disease can be fed into or fed out of the human species. 4. The chief problem in the dietetic treatment of tuberculosis is first to overcome the general malnutrition, and next to establish a higher grade of local nutrition at the infected focuses. 5. The composition, digestibility and percentage absorption of the various foodstuffs and the oxygenating capacity of the system are accurately known. 6. By this knowledge the quantity of food taken can be accurately adjusted, so that the full heat production and constructive utilization of the proteids is secured. 7. The oxygenating and carbon dioxid excreting powers of the system must not be exceeded if the best results are to be secured. 8. By following these accurate laws systematically a perfect diet can be arranged, and the abnormal and pathologic conditions can be changed to the normal, physiologically speaking. 9. The most difficult problem to contend with in the dietetic management of tuberculosis is the loss of appetite and the inability on the part of the system to digest and utilize perfectly a sufficient quantity of proteid material to maintain life and, at the same time, repair the damage already wrought. 10. When this is accomplished a large percentage of tuberculous patients are rapidly and permanently cured, more so than by medicinal treatment or simple climatic changes. 11. A universal adherence to these laws through a century might result in a complete eradication of tuberculosis from the human species."

24. **The Leucocyte Count in the New-Born.**—From a careful study of a number of cases, Warfield finds that the leu-

cocytes at the day of birth are more numerous than at any other time of normal life. The nucleated red blood corpuscles rapidly disappear from the circulating blood, reaching normal within the first three days. The percentage of eosinophiles varies widely in different babies of the same age. The myelocytes and mast cells are only occasionally found and in small numbers. The percentage of large mononuclear and transitional cells is large compared to that in adults. The polymorphonuclear cells at birth are not only relatively but absolutely increased, but begin to decrease soon after birth, and by the eleventh day of a healthy infant's life they are fewer in number than the lymphocytes, while the number of the latter variety of cell has actually increased and the differential count of the leucocytes on the eleventh day is practically identical with the count given in the text-books as normal for the infant's blood.

26. **Cancer of the Rectum.**—Adler holds to the opinion given by him at Atlanta seven years ago, at the meeting of the American Medical Association, namely, that the number of cases where operation is indicated in rectal cancer will always be relatively small, and that at the stage usually discovered by the surgeon it is less amenable to the knife than cancer occurring in other portions of the body and that operation is followed by cure in a very small proportion of cases. The dangers following excision are great and the results as to comfort anything but satisfactory, and yet in properly selected cases if seen early much good can be done by operation.

28. **Chronic Contraction of Prostatic Fibers Encircling the Vesical Neck.**—This condition, which, he says, is noticed only by Fuller among the text-books, is illustrated by the report of a case by Shelmire.

31. **Burns.**—The subject of burns is discussed at some length by Ravogli, who advocates dry powder in the treatment of erythematous burns of the first degree, followed by salves later, if excoriations occur. In second degree burns he has found the application of carron oil useful, though it is opposed by some authorities on account of the danger of infection. He thinks the continuous bath offers more advantages than any other method for exceedingly extensive burns. As regards the prognosis of burns, he believes that a first degree burn covering the whole surface of the body is nearly always fatal, and also burns of the second degree covering, say one-third of the body. In this class there is usually a favorable prognosis, but if it affects a great part of the body, and is in a delicate person, the prognosis becomes serious. A burn of the third degree, even though mild, is always a grave lesion and may often end fatally.

32. **Alopecia Areata.**—Heidingsfeld finds that trikresol, which is a mixture of three cresols, para, meta and ortho, as its name implies, has given him the best results in alopecia areata. He uses it to the exclusion of every other form of medication. Together with the advantages of cleanliness, absence of pain and irritation, it is thoroughly free from any cosmetic objection.

35. **Abortion and Premature Labor.**—Three cases are reported by Webb, who deduces from them the advisability of interrupting pregnancy in certain cases. He condemns the procrastination practiced by many in certain pathologic conditions which would render the prognosis of labor perilous.

36. **Adrenalin.**—Von Frisch employs adrenalin in bladder operations, using it on a cotton sponge, especially in operating on tumors of the bladder and performing suprapubic cystotomy. By this means he can operate without any loss of blood whatever, or none to speak of. For the endoscopic removal of papillomata of the bladder it is sufficient to fill the bladder with adrenalin solution, 1:10,000, which is also a useful preliminary to cystoscopy. In very narrow strictures which are difficult to enter, a few drops of adrenalin, 1:1000, suffice to reduce the swelling of the mucosa so as to materially facilitate the introduction of the sound and the same strength in the prostatic urethra is of great assistance in difficult catheterization. He also used the drug in three cases of acute and complete suppression of urine due to hypertrophied prostate, causing relief, at first slight, but afterward followed by return of normal function, very much after the manner in which the same result may be observed after successful Bottini operations. The adrenalin instillations were continued for several days. These effects are not to be explained by the quickly-subsiding hemostasis or blanching of the mucosa, but very probably, he says, they stand in direct relation to the immediate effect of the intervention. He believes that in many cases of retained urine following prostatic hypertrophy, in addition to the mechanical impediment caused by the enlargement of the gland, a certain part is played by the excessive muscular tension of the internal sphincter.

40. **Cancer.**—Reyburn holds that cancer is a disease of senility occurring at the time of retrograde metamorphosis, but is rare in tropical countries where the diet of the inhabitants is mostly composed of rice or starchy foods, and is especially prevalent where animal food is largely consumed. It has been noticed to increase of late years with this custom. He therefore suggests the connection between the carnivorous diet and cancer and discredits the parasitic theory.

50. **Tubercle Bacilli in the Urine.**—Bryson recommends as a means of determining the existence of tubercle bacilli in the urine, first the drawing off of the urine and then obtaining what residue remains by hypogastric pressure, that is to say, using the residual instead of tidal urine for the test. He reports several cases in which he says he would have failed to discover the bacilli if reliance had been placed alone in the search of sediment derived by centrifugalization of the tidal urine, and notes that in both cases they were found in unusually large numbers in the residual urine drawn with the catheter.

51. **Cutaneous Sarcoids.**—Gottheil reports a case at length characterized by macular eruption, papulo-tubercular eruption and trophic ulceration, without any marked subjective uncomfortable symptoms or any local or general adenopathy. Microscopically the lesions show that the growths are morphologically sarcomata, but differ from other tumors of the same name in that their growth is limited, and they increase only up to a certain point where they remain either quiescent or undergo retrogressive or degenerative changes. The general health is not impaired, and metastasis to the internal organs occurs very late if at all. These are apparently the cases in which the administration of arsenic has given good results. The term sarcoid, he thinks, is a good one, as showing on the one hand their morphological relationships, and emphasizing their clinical differences on the other.

53. **Hydrocele.**—Griffith advocates an instrument for the diagnosis of hydrocele, which consists simply in a tube or sheet of cardboard, blackened on the inside, through which the scrotal tumor is observed by transmitted light.

59. **Cocainization of Nerve Trunks.**—In order to avoid shock Cushing suggests the use of injection of cocain into the nerve-trunk, effectually blocking the transmission of all centripetal or sensory impulses, preventing the conduction of those impulses resulting from the traumatic insult which otherwise, by acting reflexly through the medullary centers, might become the chief factors in the production of shock. The greater part of his article is devoted to the discussion of operations and the nervous mechanism of shock, which is largely due, he thinks, to a reflex fall of blood-pressure, which is prevented by local anesthetization of the nerve-trunk.

60. **Rupture of the Kidney.**—From the cases quoted and his own experience, Davis concludes that the reduction in mortality since Keen's report is largely due to improved technic. Fewer deaths have been reported from sepsis. Several deaths have occurred from hemorrhage which could undoubtedly have been avoided if more prompt and efficient means had been resorted to. He predicts the mortality will be reduced to 15 per cent. The expectant plan of treatment is permissible in cases where slight hematuria is the only symptom. Tumefaction, much blood in the urine, severe pain and history of great violence, each is a positive indication for prompt operative intervention. Early operation should be done whenever the

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history of the case and symptoms point to serious injury of the kidney. Nephrotomy, with gauze tampon, where not too much blood has been lost, and nephrectomy where the kidney is irreparably injured and in less extensive injuries where either sepsis or hemorrhage is likely to prove fatal, are the operations of choice. In delayed cases it may be difficult or impossible to know just what is best to do. Each case must be considered, and if in doubt, operate; most of the cases described as shock are depression of the vital force from hemorrhage or sepsis, and nothing short of prompt surgical intervention will prevent collapse. He says operate on the history of the case rather than wait for symptoms, which may only suggest what should have been done earlier, but at last proclaim the condition without hope for relief.

62. **Sympathectomy for Glaucoma.**—Cutler and Gibson discuss a case of glaucoma and its pathology and report a case. They conclude that glaucoma is a complex disease and that in the acute forms iridectomy must be considered the operation of choice except where there is a tendency to intraocular hemorrhage. In all acute forms the improvement to be expected from iridectomy is less, as the tension of the eye is less marked, until in simple glaucoma the results of the operation are at the most 50 per cent. of successes, while in those cases on the border-line between glaucoma and optic atrophy, iridectomy is of so little value that it has been given up by many ophthalmic surgeons. In these cases, in hemorrhagic glaucoma and in not a few cases where iridectomy has failed to give relief or has done positive injury in the first eye, sympathectomy may prove to be the more conservative operation, especially as there is no evidence to show that the removal of the superior cervical ganglion of the sympathetic has resulted in any injury to the human eye.

67. **Prostatectomy.**—Moore objects to the suprapubic method and considers the perineal route safer and better in all cases except where either the third or lateral lobes are very soft and vascular and project far into the bladder. The operation in which the gland is pulled down by a staff in the bladder or by hooks and forceps from the outside, is a very great improvement on the bimanual operation, in which the bladder is unnecessarily injured. He thinks complete prostatectomy is seldom the operation of choice. The removal of the lateral lobes and third lobe when present, leaving the isthmus and preserving the greater part of the prostatic urethra, will relieve the patient's suffering, and will be followed by better functional results. This can be done in the majority of cases through the median incision. In the exceptional cases where this incision does not afford ample room it can be changed into the inverted Y-incision by adding a lateral incision outward and backward toward the tuberosity of the ischium on either side. These latter incisions should go down to the perineal muscles but not through them, and should not involve the sphincter. This gives abundant room and avoids mutilation of the unoffending bladder.

73. **Prostatic Hypertrophy.**—Lydston remarks that the prostate, while in some respects to be considered as an involuntary muscle, is anatomically and functionally a sexual gland. Its relation to micturition is accidental and we must look to perturbation of the sexual function for the explanation of its hypertrophy, especially of the pathological disturbances not directly due to traumatism or infection. He considers prostatic hypertrophy largely due to overstrain of the organ during the period of its greatest sexual activity, causing glandular proliferation affecting the tissue and muscle hyperplasia. If this persists for a long time it is followed by permanent enlargement. Ungratified sexual excitement as well as sexual excesses may be the cause, and the changes come on earlier in life than we should suppose. In a large proportion of individuals the overgrowth occurs, as a rule, before middle age, but the residual urine does not accumulate until the bladder walls have become atonic from the physiologic changes of age and the insidious effects of unnoticed obstruction. Its occurrence in advanced life from overstrain at an earlier period is explainable on the same grounds as the development of arthritic disturbance in men beyond middle age at the site of a traumatism. Inflammation, gonorrheal or otherwise, is an important factor. He considers senility, gout and rheumatism as not exciting but as determining factors in so far as they promote irritability of tissue, a tendency to connective tissue proliferation, inelasticity of tissue, and in case of the diatheses mentioned, hyperacidity of the urine with frequent micturition. General atheroma may cause enlargement and sclerosis, but this should not be classed as hypertrophy. Disturbance of micturition *per se* is not the cause, but when it arises as the consequence of prostatic hypertrophy, it reacts on the diseased organ, enhancing the pathologic condition. In normal old age the prostate should atrophy and, if it does not do so, it is due to sexual overstimulation and frequency of hyperplasia from the causes mentioned. Neither the human male or female is, on the average, perfectly healthy sexually, and careful rectal examination of men from the age of 20 upward shows that a normal prostate in size, consistency and sensibility is the exception rather than the rule. He thinks we should overhaul and remodel the nomenclature of prostatic disease. As now used the term prostatic hypertrophy is an omnibus term covering a number of different conditions. When this has been done we will hear less of total prostatectomy and more of enucleation of prostatic tumors.

74. **Suspension of the Uterus.**—Neville believes the difficulties of pregnancy and labor following operation for uterine suspension may be overcome to some extent by proper technic. He objects to Kelly's operation and also to the method of suspending the uterus by bringing its anterior face against the anterior wall. The method he suggests is making an abdominal incision just over the symphysis about two inches in length, and, after opening the cavity, the introduction of two fingers and elevating the fundus, bringing it up to the abdominal wall, then carrying two silk ligatures through the fundus on a line posterior to the uterine ends of the tubes, passing the ligatures through the peritoneum, then through the abdominal wall from within outward; thus lessening the chances for infection; not bringing the posterior wall of the uterus in contact with the abdominal wall as does Kelly.

81. **Appendicitis and Pelvic Disease.**—Peterson reviews 87 cases of abdominal section, in 34 of which the appendix was removed and subjected to careful microscopic examination. In one-half of these 34 cases the appendix was normal and in one of the others there was a subacute type of disease; in all others the obliterative form was the most common, next the ulcerative or chronic types. The various pelvic diseases associated are also reviewed at length.

82. **Lactation Atrophy of the Uterus.**—Vineberg calls attention to the fact of the meager notice of this condition in text-books and the comparative neglect of its beneficial action. Normal lactation atrophy may pass into permanent atrophy in rare instances, but he has only met with one such in 65 cases in the past year. The degree of lactation atrophy varies, and he considers it a normal physiologic process favorably promoted by the function of lactation through the reflex action on uterine tissue. He considers that imperfect involution stands next in importance to gonorrheal infection as a positive factor of pelvic disease, and lactation atrophy is largely a protection against this. He also suggests that it is a preventive of cancer, even when laceration of the cervix, etc., exists.

83. **Vaginal Section and Drainage.**—Watkins reviews the conditions in which vaginal section is advisable; in pelvic abscesses in acute cases, if in close proximity to the vaginal wall, and where it is not possible to open the abscess extraperitoneally through an abdominal incision and in which the symptoms indicate great danger in delaying operation until the suppuration extends to the floor of the pelvis. In all circumscribed, large chronic abscesses, with small amount of inflammatory exudate, which can be easily opened through a vaginal incision. The gonorrheal cases are usually bad subjects for this as the gonococci may give trouble. Only a small percentage of cases of pelvic suppuration should be operated on during the febrile period and when operation is required at that time it should usually consist of vaginal section and drainage. In cases of hematocele a free vaginal incision should

be made for the purpose of evacuating the blood and of determining whether the operation shall be completed by drainage or by removal of the affected tube. The danger of hemorrhage is slight if the wall of the hematocele is not disturbed. It should also be the treatment when the hematocele has been infected. The vaginal operation is less dangerous than the abdominal method for this simple pathologic condition. It is also of great value in puerperal infection, excepting, of course, in some cases of gonorrheal infection. Vaginal section and drainage are indicated also in all cases where there is an inflammatory mass or suspicion of one posterior to or at the side of the uterus when the progress of the case is unfavorable after careful attention has been given to the uterine cavity. The operation when carefully done can produce little or no harm and will determine the exact condition of the organs, and if suppuration is found give the patient the best possible chance of recovery.

87. **Placenta Previa.**—De Lee from his experience with 30 cases reported holds that women with placenta previa ought not to die except in rare cases, such as those with air embolism or hemorrhagic diathesis. If the child is viable labor should be induced. When the hemorrhage is moderate one may wait provided the patient is in bed and is in a well-appointed hospital. No one method of treatment will meet all cases. All known measures should be at the hand of the physician. The young practitioner should follow Schroeder, who says that the accoucheur will have the best results in placenta previa who has the least regard for the child. Placenta previa is a formidable condition, more so than most laparotomies, and to ensure the best results the patient should be in a well-equipped obstetric operating room. The best way to induce labor is to puncture the bag of waters and to put a colpeurynter in the uterus, resting on the placenta and pressing this against the cervix, and then put traction on the tube. After labor is inaugurated, or should the case be received when it is already begun and hemorrhage more or less severe has occurred, the treatment should be pursued with vigor and the doctor must not leave his patient until she is delivered and all danger is past. The objects are to stop hemorrhage, to empty the uterus, to secure contraction and retraction of the uterus and to ensure complete hemostasis. He advises against too great contraction or too rapid or early delivery and cautions especially about carrying the patient through the third stage. Infection not rarely occurs during pregnancy, which makes the organ adherent and retention of the placenta is common. If it is advisable to remove the placenta and if the usual means are not immediately successful, insert the hand for that purpose. Post-partum hemorrhage must be watched for and the physician must meet it accordingly.

88. **Resuturing the Suppurating Abdominal Incision.**—The method here suggested by Harris is to reopen the wound and convert the mural abscesses into a widely open field, which will check the flow of pus, and then under anesthesia curette the granulated tissue throughout and reunite the tissues by thoroughly sewing them together, with interrupted interlocking sutures tied alternately on the one side and then the other. The operation is described at length.

97. **Digitalis and Aconite.**—Hare thinks digitalis is often misused; that it is often given where it does harm. In a certain number of cases of valvular disease the patient does not require digitalis or any other cardiac stimulant, though he will be often greatly benefited by the administration of aconite. It has a steadying effect on the heart, through its influence on the vagi, as has digitalis, while by its sedative influence on the heart muscle in cases of excessive compensation, and by its relaxing effects on the blood-vessels, it diminishes the overaction of hypertrophy, which is sometimes confused with the tumultuous overaction of ruptured compensation. Finally, he speaks of the utter uselessness of expecting good results from either of these drugs in the treatment of myocardial disease where the patients are persistently taking severe exercise "for their health."

98. **Hyoscin Hydrobromate.**—In alcoholism, Bering reports a case treated with hyoscin with excellent results. The patient was delirious for the forty-two hours of hyoscin intoxication, the drug being given hourly for quite a period of time and no food allowed. He says he knows of no other treatment where a man so thoroughly under the influence of whiskey as this patient could be sobered as quickly without any unpleasant effects from the immediate withdrawal of the whiskey. The dose given was 1/200 to 1/100 gr. every hour, followed later by tonics and digestants.

99. **Malignant Edema.**—The case reported by Chisholm is, he thinks, the first one ever saved without amputation. The treatment which saved the patient was the application of gauze soaked in a saturated solution of acetozone, though other applications of carbolic acid, ichthyol, etc., were employed. He remarks that the disease is rare and apt to be overlooked. It has two marked characteristics, the smell, which is very pungent and has been compared to burnt horn, and the edema. The quantity of lotion used daily was six gallons, and it was applied clear up to the armpits and covered with oiled silk. The case was diagnosed microscopically so that there was no mistake as to its nature.

103. **Cocain and Morphin.**—The general conclusions of Reichert's article, which is ended in this number, are in substance as follows: That the antagonistic actions between cocain and morphin are of widespread character, extending to almost every function. They would therefore justify the conclusion that one may be regarded as meeting the important indications of a successful antagonist to the other. 2. That the only important synergistic actions are as excitomotors, and their tendencies in some individuals to cause syncope. 3. Cocain is not only sufficiently powerful to successfully antagonize the profound depressant actions of morphin on general metabolism and body temperature, but as a whole is more powerful, both relatively and absolutely, in morphinized than in normal dogs. 4. That the increase in heat production caused by cocain is due in part to a direct excitation of general metabolic activity, chiefly by motor excitement; and even in the absence of muscular excitement cocain may fully counteract the morphin depression. 5. The effects caused by a given dose of cocain per kilo of the body weight vary in intensity within wide limits. 6. The changes in body temperature following the cocain injection are, with few exceptions, closely related, quantitatively and qualitatively, to the changes in the general metabolism and are, therefore, a fairly reliable index of the intensity of the cocain actions, or of the extent to which the cocain is counteracting or superseding the depressant actions of morphin. 7. The temperature coefficients in normal and morphinized dogs after cocain are practically identical, showing that morphin does not exert any specific actions on heat dissipation, which interfere with the typical temperature-raising actions of the cocain. 8. The typical cocain effects may be delayed in the morphinized animal, and then appear with marked intensity, as shown by the increase of heat production, body temperature, and by motor excitation at a time when in normal animals they are lessening rapidly. Under such conditions the dangers of morphin poisoning may be superseded by those of cocain poisoning. 9. That owing to a coexistent paralytic-convulsant state in the morphinized animal, the administration of cocain or other powerful excitomotor may develop or intensify the convulsant moiety, and thus render a non-lethal dose of morphin lethal, or hasten death when the dose is lethal. In man, the convulsant element is almost without exception so unimportant that there is probably little or no danger of this kind except after unnecessarily large doses of the excitomotor, or in exceptional individuals in whom the excitomotor action of morphin is marked. 10. The value of cocain in morphin poisoning probably depends chiefly on the extent to which it antagonizes the depressant actions of morphin on general metabolism and body temperature. 11. The power of cocain as a respiratory stimulant depends almost solely on its actions on the heat mechanism. 12. That owing to the tendency of cocain to cause syncope in certain individuals, to its excitomotor action, to the marked variability in the intensity of the effects caused by a given dose per kilo of body weight, to the

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occasional delay or latency in the typical actions of cocain in morphinized animals, and to the fact of the greater value of small to moderate doses in morphinized dogs, it should be administered in morphin poisoning in man in small doses cautiously repeated.

107. **Tuberculosis.**—The early diagnosis of beginning pulmonary tuberculosis is to be made, according to Von Ruck, mainly from temperature symptoms, pleuritic pain, chest soreness, rough vesicular inspiration, which may be interrupted or of the so-called "cog-wheel" type, independently of transmitted cystolic cardiac impulses. These auscultatory signs indicate a local congestion of the alveoli. Lastly, recourse may be had to tuberculin, which he says is perfectly safe and reliable. The other symptoms which have been recognized from time to time, such as pretuberculous albuminuria, the so-called characteristic facial expression, abnormal conduction of heart sounds, etc., are of less value.

109. **Congenital Pulmonary Stenosis.**—From a discussion of the subject, Burke considers he is justified in assuming that Kussmaul's "die Correctur der Stauung" theory appears to him the most probable as regards the etiologic factors of the origin of pulmonary stenosis, because it sees a cause in the embryological arrest in development, as well as in the fetal inflammatory phenomena, for the development of a congenital pulmonary stenosis. Through this pulmonary stenosis, a series of heart malformations in the fetal condition can be promoted, such as the remaining open of the foramen ovale, as well as eventually the persistence of a septum defect. The ductus Botalli remains uninfluenced or even hindered by the pure physical narrowing of the pulmonary stenosis. In the extra-fetal state the pulmonary stenosis affects the right ventricle, causing stasis in the veins, cyanosis, epistaxis, dilated venous network, etc. If compensatory hypertrophy can occur, it may cause a mixed cyanosis, particularly with the open foramen ovale. Whether this can occur by septum defect is undecided. He concludes that the assertion made by authors that in pulmonary conus stenosis, an accentuation of the second pulmonary sound proves the existence of a co-existing open ductus Botalli, though possible, is supported by absolutely no facts. On the other hand we find two cases directly contradicting it. He holds that an open foramen ovale is sufficient reason to explain the accentuation of the second pulmonary sound. Eight cases in the literature attest this. The statistics of pulmonary stenosis show that we can demonstrate a narrowness of the aorta, also with the pulmonary stenosis, in a series of cases. This is probably due to an arrest in the intrafetal growth and appears as far as statistics show to be a special cause for the frequent occurrence of complicating pulmonary tuberculosis. His paper ends with an extensive bibliography.

116. **Exophthalmic Goiter.**—From a study of the facts and illustrative cases Booth concludes that Graves' disease can be completely cured in some cases by thyroidectomy as well as by bilateral section of the sympathetic. In view of the fact that some cases are cured by internal medication there must be a relative proportion where it does not cause structural changes. No theory can be regarded as adequate without taking into consideration the function of the thyroid gland. Three factors must be considered in the production of the disease: The central nervous system, the connecting fibers, sympathetic and vagus, and the thyroid gland. A lesion of one of these may produce a specific alteration in the others, the consequence of which, together with the exciting cause, may give rise to the symptoms of Graves' disease.

117. **Acute Hemorrhagic Cortical Encephalitis.**—This disorder, called by German authorities the Strümpell-Leichtenstern form, affects both sexes alike and is probably most commonly due to alcoholic indulgence. Most cases are found in adults. Trauma may be the cause of it, either mechanically or by infection. It is generally supposed to be vascular in its origin, the nerve elements being secondarily affected. The outcome may be a complete restoration to the normal or far more frequently in cases that recover there is left some cortical defect which may be shown clinically by some slight paralysis or by epilepsy. These defects may be either scar tissue or cysts. Hoppe reports several cases at length and discusses the symptomatology, noting especially the general and special cerebral symptoms, delirium, etc., the sensory symptoms and general conditions. The diagnosis is often difficult, especially between abscess, meningitis and acute mania, though other conditions may also cause confusion. For the treatment he has used salicylate of soda for the first few days or weeks and later bichlorid of mercury.

131. **Bright's Disease.**—Neff summarizes the facts in regard to cerebral symptoms of Bright's disease as follows: "1. The cerebral symptoms of Bright's disease are dependent upon a lesion, which may be localized or diffused. 2. The syndrome quite often shows variation in intensity of symptoms, and their sudden appearance or disappearance is characteristic. 3. While the brain symptoms are generally terminal or appear late in the disease, a development of general or isolated symptoms is not infrequently seen in the early stages of kidney degeneration. 4. Persistent headache and a neurasthenoid state are suggestive of disordered kidney function. 5. The generalized cerebral symptoms, such as headache, general convulsions, and disturbance of the sensory, motor and psychical centers, are more commonly dependent upon toxemia. 6. The localized cerebral symptoms are generally related to the vascular changes, being the expression of the cirrhotic arterial change which accompanies the kidney degeneration. 7. Uremia is a term often loosely applied to account for many obscure nervous symptoms. Its use should be restricted to those cases where the condition can be determined by thorough urinalysis."

FOREIGN.†

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 13.

1 A Discussion on the Value of Systematic Examination of Workers in Dangerous Trades—Lead, Mercury, etc. S. King Alcock, and others.
2 On the Injurious Influence of Fast Aniline Black Dyeing Processes. Wm. F. Dearden.
3 The Acneform Eruption of "Doffers." H. S. Purdon.
4 Some of the National, Ethical and Educational Causes of the Deficiency of Labor Hands. C. F. Moore.
5 The Granting of Certificates of Fitness to Children and Young Persons Employed in Factories and Workshops. C. A. Greaves.
6 The Granting of Certificates of Fitness to Children and Young Persons for Employment in Factories and Workshops. Alexander Campbell.
7 *A Discussion of the Relation of Phthisis to Factory and Workshop Conditions. James Niven.
8 *Discussion on the Development of the Human Urino-Genital Tract. D. Berry Hart.
9 On the Relation of Metabolism to Lymph Formation. F. A. Bainbridge.
10 Development of the Sternum, and Shoulder Girdle in Mammals. A. M. Paterson.
11 Parturition in the Guinea-pig. William Stirling.

† Some of our readers may be interested to know what journals in foreign languages are indexed in this department. They are as follows, with the name of the editor and his city of residence in most cases.

Annales de l'Institut Pasteur. (Paris.)
Annales des Mal. des Org. Gen.-Urin. (Editor, Guyon, Paris.)
Annales de Dermatologie. (Besnier, Fournier, Paris.)
Annales d'Hygiène publique. (Bronardel, Paris.)
Annales Med.-Chir. de Liège.
Anales de Oftalmologia. (Troncoso, Mexico.)
Archiv für Gynaekologie. (Gusserow, Leopold, Berlin.)
Archiv für klin. Chirurgie. (Bergmann, Berlin.)
Archiv für experimentelle Pathologie. (Naunyn, Strassburg.)
Archiv für die gesammte Physiologie. (Pflüger, Bonn.)
Archiv für Kinderheilkunde. (Baginsky, Berlin.)
Archiv für path. Anat. und Physiologie und klin. Medicin. (Virchow.)
Archiv für Verdauungskrankheiten. (Boas, Berlin.)
Archives de Neurologie. (Bourneville, Paris.)
Archives gén. de Médecine. (Duplay, Paris.)
Allgemeine Med. Central-Zeitung. (Berlin.)
Allgemeine Wiener Med. Zeitung. (Vienna.)
Berliner klin. Wochenschrift. (Ewald and Posner.)
Beiträge zur path. Anat. und allg. Path. (Ziegler, Freiburg.)
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12 A Discussion on Intestinal Secretion and the Action of Drugs Thereon. J. Sydney Edkins.
13 On Electric Phenomena Which Accompany the Oxidation of Oxalic Acid Produced by Exposure to Light. Louis Querton.
14 *On the Movements and Innervation of the Stomach. W. Page May.
15 The Action of Certain Hemolytic Agents on Nucleated Colored Corpuscles. G. N. Stewart.
16 *The Origin of a Visual Impulse. F. W. Edridge-Green.
17 On Some New Properties of Urea (with Demonstrations). W. Ramsden.
18 A Discussion on the Motor Cortex as Exemplified in the Anthropoid Apes. C. S. Sherrington and A. S. Grunbaum.
19 Some Questions with Reference to Occipital Condyles. R. J. Anderson.
20 Germ Infection in Tuberculosis—A Sketch of the Recent State of the Question. Geo. Ogilvie.
21 The Use of Paraffin for Restoring the Bridge of the Nose. Stephen Paget.
22 Absence of the Middle Finger of the Right Hand, with History. A. Robinson.

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23 Presidential Address, British Medical Association at Belfast. James Dewar.
24 *Tetanus and Vaccination: An Analytical Study of 95 Cases of the Complication. Joseph McFarland.
25 A Successful Case of Gastrectomy for Carcinoma of the Pylorus and Lesser Curvature of the Stomach. G. A. Syme.
26 A Case of Hemophilia in a Woman with Symptoms of Defective Circulation in the Legs and Threatened Gangrene of the Toes; Death with Cerebral Symptoms. Joseph A. Arkwright.
27 *The Ultimate Results in a Series of 76 Cases of Fracture of the Tibia and Fibula. R. W. Murray.
28 *The Choice of an Anesthetic for Short Operations upon the Throat and Nose. J. Henry Chalmers Cott.
29 A Case of Traumatic Rupture of the Spleen; Removal Followed by Empyema and Recovery. Edgar Beaumont and Edward Houseman.

The Practitioner (London), September.

30 *Some Points in the Treatment of Fractures. W. Arbuthnot Lane.
31 *On the Action of Certain Organic Acids on the Intestines, with Its Bearing on the Treatment of Diarrhea. Alfred C. Jordan.
32 *Practical Disinfection in Schools. A. C. Houston.

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33 (No. 35.) *Les échanges organiques pendant la période fébrile et la convalescence des maladies infectieuses. A. Jaquet. Critical Review.
34 (No. 36.) *Cancer mélanique de la face. Jaboulay.
35 (No. 37.) *L'augmentation de fréquence du cancer, sa prédominance dans les villes et sa prédilection pour le sexe féminin, sont-elles réelles ou apparentes? R. de Bovis.

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36 *Vermeidung der (prevention of) Tetanusinfection bei subcutaner Anwendung der Gelatin. P. Krause.
37 *Zur topischen Diagnostik der Magengeschwüriste (gastric ulcers). K. Schlesinger.
38 Ueber Amboceptoroidbildung in einem menschlichen Serum. E. Neisser.
39 *Zur Behandlung der Oberkieferhöhleneiterungen (treatment of suppuration in maxillary sinus). Stormann.

July 28.

40 Certain Questions of the Day in Regard to Tuberculosis. J. Orth.—Ueber einige Zelt- und Streitfragen aus dem Gebiete der Tuberkulose.
41 *Myeloid Transformation of Spleen and Lymphatics. H. Hirschfeld.—Ueber myeloide Umwandlung der Milz und der Lymphdrüsen.
42 Der Lupus erythematodes. E. Holländer.
43 Ueber pernicióse Anaemien. P. Reckzeh. (Commenced in No. 29.)

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44 Frequency of Absence of Typical Dullness in Appendicitis. Riedel.—Wie oft fehlt die typische Dämpfung in der rechten Fossa iliaca bei der Appendicitis?
45 Fat Tissue Necrosis. P. Wulff.—Zur Fettgewebsnekrose.

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46 Ueber Heilung und Heilbarkeit der Lungenphthise. D. von Hansemann.
47 Beitrag zur Agglutination des Pestbacillus. A. Aujeszky.
48 Aspirin und Digitalis-Dialysat. Görges.
49 *Eine Krebsstatistik vom path.-anatomischen Standpunkt. W. Riechelmann. (Commenced in No. 31.)

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50 (No. 36.) *Diversion of Portal Blood by Direct Union of the Portal Vein with the Vena Cava. I. Tansini.—Ableitung des portalen Blutes durch die direkte Verbindung der V. portæ mit der V. cava. Neues operatives Verfahren.
51 (No. 36.) Favorable Experiences with the Roth-Dräger Oxygen-Chloroform Narcosis Apparatus. F. Engelmann.—Ueber Erfahrungen mit dem R.-D. Sauerstoffnarkosenapparat.

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52 (No. 35.) *Zur Casuistik des Accouchement forcé unter Anwendung von Bossi's Dilatator. L. Knapp.
53 Midwifery in Germany. F. Ahlfeld.—Die Zukunft unseres Hebammenstandes.
54 Zwei vaginale Sectio cesarea bei Eklampsie. Jahreiss.
55 *Urethroplastik nach der Idee von Subbotin in der gynakologischen Praxis. V. Grusdeff.
56 (No. 36.) Was ist intraabdominieller Druck? R. Meyer.
57 *Der Belastungs-Kolpeurynter. L. Pincus.
58 Combined Needle and Silk Holder. K. Czerwenka.—Ein Nähinstrument mit Seidenbehälter.

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59 (No. 37.) *Hot Air Treatment in Gynecic Practice. O. Poliano.—Zur Anwendung der Heissluftttherapie in der Gynäkologie.
60 Fall von Tetanus nach Gelatineinjektion. R. Gradenwitz.
61 *Extramedian Symphysiotomy. T. H. Van de Velde.—Die Hebotomie.
62 *Zur Sterilisations-Frage. J. Kocks.

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63 *Dangers of Tavel's Saline-alkaline Solution for Subcutaneous Use. Balsch.—Ueber die Gefährlichkeit der Tavel'schen Kochsalz-Sodalösung bei subcut. Anwendung.
64 *Experimentelle Studien über die Eklampsie. W. Weichardt.
65 Bemerkungen zur Morbus Barlowii. H. Neumann.
66 Mode of Origin of Respiratory Sounds. J. Marek.—Ueber die Entstehungsweise der Athemgeräusche. (Commenced in No. 34.)
67 *Zur Technik der mechanischen Behandlung des Hydrops. H. Citron.
68 *Preliminary Report of Certain Results of Cancer Research. E. von Leyden and F. Blumenthal.—Vorläufige Mitteilungen über einige Ergebnisse der Krebsforschung auf der 1ten med. Klinik.
69 *Achievements of Endoscopy in Cases of Foreign Bodies in Air-Passages and Esophagus. G. Killian.—Die diagn. und therap. Leistungen der modernen direkten endoskopischen Untersuchungsmethoden bei Fremdkörpern in den Luft- und Speisewegen.
70 *New Method of Determining Potassium Iodid in the Blood. Karfunkel.—Eine neue Methode des Nachweises von Jodkalien im Blute.
71 Plea for More General Protective Serum Injections in Diphtheria. H. Neumann.—Schützimpfung bei Diphtherie.
72 Value of "Pegnin" in Therapeutics. M. Hirschfeld.—Zur Pegnintherapie.

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73 Ueber total Exstirpation des carcinomatösen Uterus mittelst doppelseitiger Scheidenspaltung (bilateral incision of the vagina). C. Staude.
74 Zur Technik der abd. Totalexstirpation des carc. Uterus. Krönig.
75 Simultaneous Carcinoma in Uterus und Stomach. Krönig.—Gleichzeitiges Vorkommen von Uterus- und Magen-Carcinom.
76 Ein Beitrag zur Aetiologie des wiederkehrenden Icterus gravidltatis. O. Schaeffer.
77 Die Vagina- und Ventrofixationen des Uterus. E. Dirmoser.

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78 Ueber die Bildung der Haematocelen. O. Busse.
79 Young Human Ova. Van der Hoeven.—Junge menschliche Eier.
80 Storch's Reaction in Human Milk. M. Thiemich.—Ueber die Storch'sche Reaction der Frauenmilch.
81 *Intra-uterine Colpeurynter in Obstetrics. V. Zimmermann.—Die intraut. Ballonbehandlung in der Geburtshilfe.
82 *Diagnose und Behandlung der Exudate. Dützmann.

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83 (No. 1.) Multibirths. W. Weinberg.—Probleme der Mehrlingsgeburtenstatistik.
84 *Einige Worte über die Menopause. L. Kleinwächter.
85 *The Cautery Actuar in the Abdominal Cavity. K. Franz.—Ueber die Bedeutung der Brandschorfe in der Bauchhöhle.
86 *Myom und Herz. L. Kessler.
87 *Beiträge zur Behandlung der Retroversio-flexio uteri, nach Werthelm. Doblanck.
88 (No. 2.) *Post-Partum Hemorrhages. M. Henkel.—Blutungen nach der Geburt und ihre Behandlung.
89 *Beitrag zur Aetiologie der Post-Partum-Blutungen. F. Ahlfeld.
90 Proportions of Twins from One Ovum. G. Ahlfeld.—Wie stellt sich das Zahlenverhältniss der eineligen Zwillinge zu den zweieiligen?
91 *Zur Prophylaxe der puerperalen Mastitis. F. Ahlfeld.
92 Contractions of Pregnant Uterus Simulating Myoma. F. Ahlfeld.—Partielle Contractionen des schwangeren Uterus, Myome vortäuschend.
93 Die bacteriotoxische Endometritis. M. Walthard.
94 Was ist zu verstehen unter "modus Baudelocque, Schültze, Duncan"? K. Holzapfel.
95 *Pigment of Skin and Urine During Pregnancy. G. J. Wychgel.—Untersuchungen über das Pigment der Haut und des Urins während der Schwangerschaft.
96 (No. 3.) Ueber Sarcome des Ovariums. A. Stauder.
97 Left Ureter Debouching in Uterovaginal Cyst of Wolffian Duct. R. Meyer.—Einmündung des linken Ureters in eine Uterovaginalcyste des Wolff'schen Ganges.
98 Uterustorsion bei Myom und acuter, nicht entzündlichen Hämatosalpinx. C. H. Stratz.
99 Klinische Beiträge zur Frage der Wochenbettsmorbidität (puerperal morbidity). W. Zangemeister.
100 Alcohol Disinfection. A. Rieländer.—Der microsc. Nachweis vom Eindringen des Alkohols in der Haut bei der Heisswasser-Alkohol Desinfektion.—Ibid. K. Fett. (Commenced in No. 1.)

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101 (No. 5.) Ueber Glycosurie und alimentäre Glycosurie bei Geisteskranken (in the insane). F. Raimann.
102 Ueber congenitale Pulmonal-Stenose; 3 Fälle. J. Burke.
103 Zur Diagnose der Tetanie im Kindesalter (in childhood). F. Ganghofner.
104 (No. 6.) *Zur Chirurgie des Leistenhodens (undescended testicle). K. Ploc.
105 *Zur radiographischen Anatomie und Klinik der syphilitischen Knochenerkrankungen an Extremitäten. R. Klemböck.
106 *Ibid der tuberkulösen Erkrankung der Fingerknochen (spina ventosa). Ibid.
107 *Ueber Lupusbehandlung mit dem Lang'schen Luftbrenner (Lang's instrument for hot air treatment). L. Spitzer.
108 (No. 7.) Zur Kenntniss tertiärer Läsionen bei Tumor cerebri. A. Fuchs.
109 Untersuchungen über Hydranencephalie. H. Kluge.
110 Die Pathologie der Bewegungsstörungen (motor disturbances) bei Pseudobulbärparalyse. F. Hartmann.

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111 Transformation of Adenin in Animal Organism. A. Nicolaier.—Ueber die Umwandlung des Adenins im thierischen Organismus.
112 Ueber eine seltene Form von Amyloid- und Hyalin-Infiltration am Circulations- und Digestions-Apparat. F. Steinhaus.
113 Importance of Lymphoid Cells. A. Wolff.—Ueber die Bedeutung der Lymphoidzelle bei der normalen Blutbildung und bei der Leukaemie.
114 Trauma in Etiology of Fat Tissue Necrosis. C. R. Runge.—Ueber die Bedeutung des Trauma in der Aetiologie der disseminirten Fettgewebsnekrose.
115 Zur Wirkung des Urotropins. A. Götzl.
116 Determination of Bromin in Urine and Saliva. G. Sticker.—Die Nachweisung des Broms in Harn und Speichel.
117 Severe Abdominal Symptoms in Incipient Pneumonia or Pleuritis. F. Hampeln.—Ueber schwere Abdominalerscheinungen in Beginn einer Pneumonie oder Pleuritis.
118 Biblisch-Talmudisch Pathologie. J. Preuss.
119 Ueber Asthma dyspepticum. M. Einhorn.

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7. **Phthisis and Factory Work.**—Niven studied the statistics of the Registrar General's office in Great Britain as to the incidence of phthisis among the various classes of workmen. He finds in the County of London, as typifying the effect of large towns, the female phthisis death-rate considerably exceeds the male at the very early ages, but in the later periods of life the death rate of the male considerably exceeds that of the female, both in town and country. He also finds somewhat similar figures in other large towns, such as Manchester. He attributes a large part of the incidence of consumption to alcoholism, which is most prevalent probably among the males, and also to the influence of residence, lodging houses, occupation, etc. He goes over the various occupations and thinks the measures needed to remedy the conditions are: 1. The compulsory notification of tuberculosis so that the patient can be instructed in the precautions needed to protect his fellow workers. All spitting in workshops should be prohibited. Those having the necessity to spit should carry a pocket spittoon. It is impossible to doubt that the habit of spitting in workshops has much to do with the prevalence of phthisis. Increased efforts should be made to secure a systematic wet sweeping instead of the dry sweeping, and the ventilation and lighting should be improved. Hospitals or sanatoriums are also needed and measures for the removal of consumptives from crowded houses. The public house is a very large manufacturer of phthisis among workers.

8. **The Developments of the Human Urogenital Tract.**—Hart reviews the embryologic facts and summarizes that there are practically two views of the constitution of the adult female genital tract: 1. We may, on the one hand, consider the tubes, uterus and vagina to be developed from the Müllerian ducts. The vestibule is derived from the urino-genital sinus. The hymen is a vaginal product. The Wolffian body and duct take no part in the normal development of the genital tract. The former gives the epoöphoron as a normal relic, but the paroöphoron and the traces of the duct lower down are pathologic. The epithelium lining the ducts of Müller is transformed into multiple squamous layers in the vaginal canal and over the portio, but is columnar above the os externum. The second view which he brings forward for consideration is: "That the tubes, uterus, and upper two-thirds of the vagina are Müllerian in origin; the lower third of the vagina and vestibule are derived from the urino-genital sinus, and the hymen from epithelial proliferations of the lower ends of the Wolffian ducts. The vaginal epithelium and that of the portio is, in the adult, of a multiple squamous nature, and arises in the three and a half months' embryo by an upward proliferation from the Wolffian bulbs. The whole internal genital apparatus thus arises in connection with the Müllerian ducts and the Wolffian bodies and ducts, and, so far as concerns the Wolffian ducts, is partly a utilization, and partly a development from these structures."

14. **Innervation of the Stomach.**—May sums up his statistics by saying that the vagus contains both motor and inhibitory fibers for the stomach musculature and that the influence of these fibers is definite and easily demonstrated. His results

agree with those of previous observers, but supplement these in certain details. On the other hand, from his studies we can not but conclude that the splanchnic nerves have no influence, either motor or inhibitory, on the muscle wall or stomach, being in opposition, so far as he notes it, to the views of previous workers on the subject.

16. **The Color Sense.**—Edridge-Green's theory is that the visual impulse caused by the different rays of light differs in character just as the rays of light differ in wave length. In the impulse itself we have the physiologic basis of light and in the quality of the impulse the physiologic basis of color. The color according to this theory is perceived by a special center independent of the visual center, but closely connected with it. The existence of a separate color perceiving center is supported by many pathologic facts, and it is obvious that the theory of the omission of a set of fibers does not explain the facts of color blindness and tests based on this theory must fail to be efficient. Therefore, not less than six varieties of color blindness may escape detection by the Holmgren test, and three of these are dangerously color blind.

24. **Tetanus and Vaccination.**—The statistics of tetanus in vaccination are reviewed by McFarland, who considers the following conclusions justifiable: "1. Tetanus is not a frequent complication of vaccination. 2. The number of cases observed during 1901 was out of all proportion to what has been observed heretofore. 3. The cases are chiefly American, and occur scattered throughout the eastern United States and Canada. 4. The cases have nothing to do with atmospheric or telluric conditions. 5. A small number occurred after the use of various viruses. 6. An overwhelming proportion occurred after the use of a certain virus. 7. The tetanus organism is in the virus in small numbers, being derived from the manure and hay. 8. Occasionally, through carelessness or accident, the number of bacilli becomes greater than usual and may lead to the epidemic occurrence of tetanus. 9. The future avoidance of the complication is to be sought for in greater care in the preparation of the vaccine virus."

27. **Fracture of the Tibia and Fibula.**—In the 76 cases of fracture analyzed here by Murray the results were not especially flattering in a large proportion of cases. Murray criticises the vertical foot piece and side splint and suggests that the foot piece should be put at an angle of 70 instead of being vertical, which permits the foot and leg being fixed in the natural position of rest and relieves the tendo Achillis from being in a state of passive tension, thus lessening the tendency of over-riding the fragments. In a certain proportion of cases, however, it is practically impossible by the splint alone to get the broken ends in a correct position. The chief obstacle is, he thinks, hemorrhage into and inflammation of the soft parts. He also adds to this another factor occasionally met, namely, the piercing of adjacent muscles and fascia by the sharp ends of broken bone. He does not, however, consider it necessary in all cases to cut down on the fracture, though in a considerable number this measure is not only justifiable, but called for. From *x*-ray photographs which he has seen of Pott's fracture, he thinks the usual defect beginning after fracture is slight displacement outward and backward. For this the form of splint above mentioned is well adapted.

28. **The Choice of Anesthetic.**—From the study of a large number of operations of tonsillotomy and for adenoids, Chaldecott finds that chloroform has been the means of destroying more than 50 lives during adenoid operations and can not, therefore, be regarded as anything but a dangerous anesthetic, and some of these deaths have occurred in the hands of the skilled and experienced. On the other hand, thousands of these operations are performed every year under gas and gas and ether, and he asks, in view of these facts, are we justified in subjecting patients to the unnecessary risks of the chloroform anesthetic. He thinks decidedly not.

30. **Fractures.**—Two cases of fracture are reported by Lane with skiagraphs and illustrations. He calls attention to the fact that they demonstrate that a structure retains its original form and texture only as long as it is exposed to the influence of the forces which originally determined them in the first instance. Remove the habitual action of these forces, or modify their direction, or let only one group exert an influence, and corresponding changes result at once. The structure of any portion of the skeleton varies with its function or the use to which it is put. They also show the action of the law which he formulated in studying labor changes in the human subject and in animals. The best example of this is the formation of the new joint between the atlas and occiput in the fully developed shoemaker. The sweated shoemaker, as he sits daily for twelve hours or probably a longer period, holds his head in a sloping position, so that it is tilted obliquely to one side. It would thus be of greatest service to him in that it would relieve him of muscular strain if he had projecting up from the lateral mass of the atlas, on the one side to which the skull is tilted, a pillar of bone to articulate with the jugular process of the occipital bone, and form with it a secure joint through which a portion of the superjacent weight could be transmitted. This is exactly what takes place, as he has demonstrated. The subject is fully considered in a paper on "The Anatomy and Physiology of the Shoemaker," in the *Journal of Anatomy and Physiology* for July, 1888. In cases of other mechanics or laborers he has seen in disease of the bone or joints and fractures, evidence of the validity of the same law. In case of fracture through the epiphyseal line, the perfection with which the part is restored to its normal function varies inversely with the age of the subject. In children the great difficulty is the friability of the epiphyses and unless very great care is taken the wire sutures tear out. He criticises the conservatism of many modern surgeons in not operating directly on fractures.

31. **Action of Organic Acids on the Intestines.**—From an experimental study on rabbits, Jordan finds that the majority of organic acids have a decided effect on the mucous membrane of the intestines and he applies these facts to the treatment of diarrhea. Of course, acids differ and they do not usually go far into the intestines on account of the action of bile and alkaline juices. The passage is sometimes, however, made very rapidly in the intestinal canal. Acids may then be directly irritant and cause the local lesions of diarrhea, etc., in their action on the intestines. Moreover, acids produced in the body from food, etc., lactic, butyric, etc., are largely responsible for intestinal irritation, and butyric acid as the chief offender we may assume is liable to be formed from milk and carbohydrates. His work is, he says, only begun, but he thinks this line of research hopeful of results.

32. **Disinfection in Schools.**—Houston's paper reviews the different methods of disinfection and their value. For gaseous disinfection he finds formaldehyd best of all. For furniture, books, etc., too valuable to be destroyed, formalin disinfection may perhaps be sufficient or they may be put in a library especially devoted to the use of infectious patients. He believes in the use of Lingner's glycoformal solution combined with spraying or washing of walls with some germicidal solution; but in the ordinary cases, gaseous disinfection, with formalin vapor and scrubbing the floor with some good disinfectant solution, will be sufficient. For mattresses, blankets, carpets, clothes, etc., saturated steam at 115 C. for thirty minutes is the standard disinfectant. For disinfection of excreta, he recommends corrosive sublimate 1/500 for twenty-four hours or boiling for ten minutes. For linen disinfection he recommends izal 1/100 and corrosive sublimate 1/2000, though boiling the linen or washing it in boiling water is quite reliable. Boiling water is sufficient for the disinfection of cups, saucers, plates, spoons, knives, etc. There is no internal medicine that will render the feces non-infectious as urotropin does the urine. As regards the disinfection of the mouth and throat no very positive view can be expressed. Gargling and washing the mouth with weak disinfectants may be of some small service. The surface of the body may be sponged with corrosive sublimate 1/1000 or izal 1/700, but the disinfection of any surface of the body is rather dubious. As regards baths, there is probably nothing better than soap and water. After each movement of the bowels the soiled parts should be wiped with absorbent cotton wool soaked in a weak disinfectant solution, then with dry wool, afterwards burning the wool. It is not very impor-

tant in some diseases, but is especially so in enteric fever. Brushes, combs and tooth brushes should be considered as infected articles and when the hair is cut the clippings should be burned. For the attendants perfect cleanliness should be the chief consideration, but the use of disinfectant solutions for the hands is advisable. He summarizes the main points for disinfection in the following: "For rooms and for furniture, books, boots, shoes and articles liable to be injured by steam disinfection, formic aldehyd vapor, preferably Lingner's (glycoformal) apparatus, one apparatus for a room 2800 cubic feet, 2 liters of glycoformal being used. Duration of exposure, four hours. For general washing purposes, corrosive sublimate 1 in 1000. Duration of contact, one hour. The mixture to be thorough. For linen, cups, saucers, plates, spoons and knives, boiling water. For bedding, clothes, hangings, carpets, and undergarments (other than linen), saturated steam at 115 C. for thirty minutes." The article is followed by an appendix giving conclusions from various authorities on disinfectants and their value.

33. **Metabolism During and After Infectious Diseases.**—Jaquet concludes from his critical review of the literature that the consensus of opinion now is that the organic interchanges are not accelerated in fever to the extent formerly supposed, but still sufficiently so as to require an extra amount of nourishment during convalescence to compensate for the loss from this cause during the course of the disease.

34. **Melanic Cancer of the Face.**—Jaboulay warns against meddling with a mole. He describes two cases in which a small mole was pricked, squeezed, etc., and became transformed into a malignant melanic neoplasm. Moles are always suspicious of melanosis and should be absolutely left alone. Barbers should be cautioned not to cut them, and they should never be pricked nor scratched with the nail. In one of his cases a medical student, after scarifying a small mole on his hand, excised it. Death soon followed from melanosis. Jaboulay has been giving the other patient quinin, internally and subcutaneously, as the cancer was inoperable. She says that the tumor has diminished in size and is less annoying, but the lesion is too extensive for long survival.

35. **Supposed Increase of Cancer.**—Prof. R. de Bovis of Rheims has been making a special study of cancer, its predominance in cities and its predilection for the female sex, and cites his authorities in detail. They include numerous official demographic reports as well as special articles, and the general conclusion is inevitable that the supposed frightful increase of cancer in recent years has no foundation in fact. The increase may be a fact, but even this is dubious, and it certainly is not so considerable as affirmed by various writers. The data also show that the supposed higher mortality from cancer among women is due to the circumstance that the genital organs are the most frequent seat of cancer in women, and this class of cancer develops at a much earlier age than cancer elsewhere. More women live to grow old than men, and consequently this must be borne in mind in comparing statistics. De Bovis claims that, age for age, the proportion of women affected with cancer is almost identical to that of men, 101 to 100. The compared statistics of the various countries brought to an even basis, indicate that, on the whole, cancer of the rectum is stationary; that cancer of the uterus has considerably diminished and cancer of the mamma and of the extremities still more so. Cancer of the mouth and its adnexa is possibly slightly increasing. The principal increase is in the line of cancer of the viscera. External, accessible cancers are, to say the least, stationary. The increase in frequency of cancer of the internal organs is rendered probable by certain social facts of the day, but the increase indicated by statistics is more liable to be apparent than real. Among the figures he cites are those of the mortality from cancer of the mamma, uterus and mouth in Paris during the last twenty-five years. Mammary cancer has dropped from 26.6 to 23.7; cancer of the uterus from 80.2 to 69.9, while cancer of the mouth is about stationary, 6.6 to 6.4. Cancer seems to be a little more frequent in cities than in the country, but if the statistics could be collected by the same method in each, this greater frequency would be found to be very trifling. Cancer subjects drift to the cities and swell the urban statistics. Another cause of error is the fact that the proportion of adults is higher in the city than in the country. St. Petersburg is the only exception to the general rule that the statistics of cities show a great increase in the number of cases of cancer during the last quarter century. This difference may be due to the fact that St. Petersburg has doubled its population in the last twelve years.

36. **Prevention of Infection from Subcutaneous Injection of Gelatin.**—Krause urges practitioners not to be deterred from the use of gelatin by the accidents that have followed its application when it was insufficiently sterilized. He says that it can be used with confidence after it has been fractionally sterilized in steam at 100 C. for half an hour on five consecutive days. It is too valuable an aid in certain cases to be discarded on account of avoidable accidents.

37. **Topical Diagnosis of Gastric Ulcer.**—Glaessner states that the experience at Ewald's clinic indicates that a gastric ulcer is always located in the fundus when the secretion of rennet-ferment and pepsin is diminished. The site is in the pylorus region when the rennet-ferment is in comparatively physiologic proportions. These findings were constant in eleven patients, and the diagnosis of the localization based on them was confirmed by an operation or the course of events.

39. **Treatment of Suppuration in Maxillary Sinus.**—Sturmann disapproves of strong antiseptics, as they depress the vitality of the mucous membrane. He rinses the sinus copiously with saline solution to wash out all secretions. As they become less in quantity and more mucous, after thorough rinsing, he injects 30 to 50 gm. of a .5 per cent. solution of zinc chlorid or a .25 per cent. solution of silver nitrate. Insufflation of dermatol or tannoform may also prove useful.

41. **Myeloid Transformation of Spleen and Lymphatics.**—This transformation in the course of certain diseases is explained by Hirschfeld as an effort on the part of these organs to aid the insufficient bone marrow in the production of granulated leucocytes. He has examined four cases of myelogenic leukemia under the microscope and the findings invariably confirmed this view.

49. **Statistics of Cancer from the Standpoint of the Pathologic Anatomist.**—Hoffmann has reported that 19.6 per cent. of the cancers found at autopsies had not been recognized during life. Riechelmann found in 58 cases that the diagnosis of cancer made during life was not sustained by the anatomic findings. In 156 other cadavers a cancer was found which had not been diagnosed during life. Path.-anatomic statistics, he states, fail to confirm the assumption that cancer has increased in frequency of late years.

50. **Diversion of the Portal Blood by Direct Union of the Portal Vein and Vena Cava.**—Tansini has tried this new operative procedure a number of times on the cadaver and found it extremely simple and invariably effective. The operation was also performed on 12 dogs and with complete success in 9. The animals whose circulation had been diverted in this way all remained in the best of health and grew fat until they were killed, when the perfect condition of the union of the two veins was determined. The failure was due in one case to defective preliminary technic. The portal vein was isolated and exposed and a small portion of the vena cava. The circulation was temporarily arrested in each with rubber-covered clamps. The portal vein was then ligated close to the hilus of the liver, and divided. A spindle-shaped strip was then cut out of the vena cava between two clamps. The portal vein was then inserted in this slit and fastened in place by a continuous silk suture. The circulation was restored as soon as the clamps were removed and the termino-lateral anastomosis was complete and permanent.

52. **Bossi's Dilator in "Accouchement Force."**—Leopold recently published a series of 17 obstetric cases in which he had had occasion to induce rapid dilation and had found Bossi's dilator of remarkable benefit. Knapp reports similar experience with it at the Prague Maternity, and describes one case in particular in which a phthisic woman was in labor with

severe cyanosis and extreme dyspnea, the pulse small, frequent and arrhythmic. The bag of waters was ruptured, Bossi's dilator introduced and the os dilated in seven minutes sufficient for the extraction of a dead fetus. He agrees with Leopold that the introduction of this dilator will render Cesarean section an extremely rare necessity in eclampsia and also in cases of agonal birth, etc.

55. **Intrarectal Urethroplastics in Gynecology.**—Grusdeff's communication on this subject was mentioned in THE JOURNAL of September 20, p. 733. Further details of his modification of Subbotine's technic are as follows: A large vesicovaginal fistula was complicated by stricture of the vagina, complete destruction of the urethra, a small rectovaginal fistula and cystitis with left pyelitis. He first performed episiocleisis (closure of the vulva), emptying the bladder thereafter through a glass tube inserted in the rectovaginal fistula. This allowed the closed vagina and the bladder to be irrigated through the fistula with a disinfectant. Thirty-two days later he proceeded to the urethroplastic operation, the patient in the dorso-coccygeal position, the pelvis elevated. After maximal dilation of the anus with a Weiss speculum, he made a picket-shaped incision in the anterior rectal wall, thus freeing a flap with its point upward, the parallel incisions carried downward through the anus into the skin outside. The incision extended to the submucous layer. A glass tube was then inserted through the vaginal fistula into the vagina and the picket-shaped flap was carefully sutured over this to make the new urethra. (See p. 733 and also the cut of Subbotine's operation, p. 211, xxxviii.) The rectum was then reconstructed by suturing the rear edges of the two incisions. The operation was simple and free from hemorrhage or other mishap. The glass tube was left for a time in the new urethra, but trouble was experienced with the onset of the menses. The menstrual discharge obstructed the glass tube and it had to be taken out and cleaned. Some difficulty was experienced in replacing it, and injury resulted, causing a fistula from the new urethra into the rectum, requiring a third operation to close this new fistula. After this had been done and the tube permanently removed, the success of the operation was complete. The patient now has a new urethra, entirely distinct from the rectum, with its own sphincter. She urinates regularly through this urethra and can retain as much as 350 c.c. The functions of the rectum are not interfered with in the least. During menstruation considerable effort is necessary at times to void the contents of the urethra and the catheter has been occasionally required. In every other respect the operation has been a brilliant success and this drawback could be avoided in future interventions of the kind by preliminary steam cauterization of the uterus.

57. **The "Weight" Colpeurynter.**—Pincus expresses his gratification that his "Belastungs" colpeurynter, filled with air or mercury, has met with such ready acceptance in gynecologic circles. It has proved exceptionally effective for the ambulant treatment of chronic pelvic exudates, and Kehrer in particular has lauded its "dosableness" as one of its great advantages. In a few rare cases the exudate is located so low down that he has found it advisable to modify slightly the shape of the bag. Instead of being like a pear it is more of the traditional heart shape. This enables the parts to be immobilized without direct upward pressure on the portio. (For further description see THE JOURNAL of Sept. 28, 1901, p. 872.)

59. **Hot-Air Treatment in Gynecic Practice.**—Polano has long proclaimed the advantages to be derived from local application of hot air in the treatment of old, hard exudates on which it has almost a specific action, as Dützmann corroborates below. It affects an exudate like a hot cataplasm, only far more energetically. The effect is so vigorous that it has to be carefully supervised as in one case he describes an exudate as hard as a stone, softened, and the moment for incision not being noticed the pus made spontaneous irruption through the navel and into the bladder. Hot-air treatment has also proved extremely valuable in the after-care of an evacuated exudate, in cases of infantilism of the female genitalia and in fresh gonorrheal processes in the adnexa. He describes a case of the latter very favorably influenced by it. Fever is a contra-indication and also endometritis, as serous and hemorrhagic discharges would be aggravated by it. He has previously published a case of actinomycosis of the abdominal wall, cured by this means, and Kehrer has reported the cure of a rebellious fistula in the abdominal wall consecutive to an exploratory laparotomy for tubercular peritonitis, with marked improvement in the general health. Polano has applied hot air in the treatment of gynecologic affections in Martin's, Löhlein's and Pfannenstiel's services at Greifswald and Giessen. He restricts the heat to 120 or 125 C., beginning usually with 115 C., and removes the apparatus at the end of thirty minutes. He supplements the procedure with hydriatic measures as indicated, or wraps the patient in a blanket, after applying a cataplasm. He has used various apparatus and found Bier's simple box and alcohol lamp as effective as any. He concludes by recommending Kehrer's incandescent lamp apparatus for keeping patients warm during protracted operations, as a remarkably simple, safe and effective contrivance for the purpose, deserving wide adoption.

61. **Hebotomy or Extramedian Symphysiotomy.**—Van de Velde has performed twice extramedian symphysiotomy or hebotomy as he prefers to call it, from the Greek term for the os pubis, *heb.* Since Gigli first suggested it in 1894, this operation has been done five times in all, but only in Italy and Holland. The five mothers recovered rapidly and the five children were born in good condition. The operation has been made possible by Gigli's invention of the wire saw. The latter's first hebotomy on the living subject was described in THE JOURNAL recently, p. 226. The two cases operated on by Van de Velde are described and illustrated in the present article. He agrees with Gigli in lauding hebotomy as a typical, simple, and easy operation, not requiring more than three minutes. The natural supports for the bladder and urethra are not interfered with. Another advantage of hebotomy over symphysiotomy is that as the soft parts are thicker than on the median line there is less liability of the wound's tearing into the vagina. There is also less danger of hemorrhage and the arrangement of the muscles prevents undue separation of the halves of the pelvis. The conditions for rapid healing are much more favorable when a bone, rather than a joint, is divided. Its great superiority, however, lies in the possibility of ensuring asepsis. The only disadvantage is that the wound is closer to the larger crural vessels, and a hematoma or infection might entail edema of the leg. But this drawback is trifling compared to the numerous advantages of the operation. He thinks that we have in hebotomy for cases of a conj. vera of 7 cm. and over, an operation which is harmless for the child, with very little danger for the mother, and not too difficult for the obstetrician, and that it should rank as an extremely valuable acquisition for the treatment of childbirth in cases of narrow pelvis.

62. **Artificial Sterilization.**—Kocks recalls that he published in 1878 a method of inducing artificial sterility in women by galvanocaustic obliteration of both ostia uterina of the tubes. He has recently treated two cases by taking up a couple of folds in the mucosa of the os uteri, thus forming a valve which allows the secretions to escape while preventing the entrance of spermatozoa. He made a small arc incision on each side and then sutured each wound with three fine stitches parallel to the direction of the incision. This procedure was suggested to him by a case in which conception had been prevented by a small mucous polyp, not larger than a bean, filling and obstructing the external os. Ablation of this polyp was followed by conception. He thinks that possibly a single fold might answer the purpose of a valve better than the two he made. The advantage of this method of sterilization is that it can be undone at will. As the patients did not return he assumes that the intervention proved satisfactory. He observes that married women with severe lung, heart or kidney disease have a right to demand that their physician should render conception impossible.

63. **Dangers of Tavel's Saline Alkaline Solution.**—THE JOURNAL has mentioned Tavel's recommendations of a combina-

tion of 7.5 gm, salt and 2.5 gm. calcined soda in 1000 c.c. water, as a strongly bactericidal fluid for sterilization purposes and for irrigating in general surgery. Its effect has been ascribed to the alterations in osmotic pressure which it induces, and its appreciation in surgery has been based on the fact that it did not injure the tissues, while still destroying the germs. Baisch reports experiences with it at Döderlein's clinic at Tübingen, which showed that it is liable to induce gangrene when injected subcutaneously. A few days after the injection the part swelled and gangrene resulted in 6 cases that did not heal for five months in some and in one instance secondary infection terminated fatally. Experiments on animals confirmed the dangers of this fluid for subcutaneous injection. Injected into a vein or into the peritoneal cavity it is rapidly absorbed, and proved perfectly harmless, but when injected under the skin as a substitute for the ordinary saline solution, it injured the tissues as described. This injury did not occur at the point of injection but at the point where the fluid finally settled by its gravity.

64. **Experimental Studies of Eclampsia.**—Weichardt has been applying the principles of the biologic blood test, specifically prepared serums and resulting cytolysis, to the study of eclampsia. The results render it highly probable that the elements of the placenta washed away in the blood liberate a toxin as they dissolve which induces eclampsia unless it is bound at once by some natural antitoxin or groups of receptors. Some individuals possess these natural defenses and others do not.

67. **Technic of Mechanical Treatment of Hydrops.**—Citron has modified Miura's apparatus which is merely a cupping glass with siphon tube. He has added an appliance which permits stronger aspiration and has been much pleased with the results. In one case of chronic Bright's disease from 250 to 1500 c.c. of fluid were aspirated at each application of the apparatus, a total of 50 liters in the course of nine months. He left the apparatus in place sometimes all day long, never at night. The skin under the glass showed symptoms of inflammation four times, but it was readily controlled. He always anesthetized the spot beforehand with ethyl chlorid and made an X incision. He made 30 incisions and applied the apparatus 70 times in the case reported. The patient was very much improved, and now, two years after commencing this treatment, she rides a bicycle and is in a generally satisfactory condition.

68. **Von Leyden's Attempts at Serum Treatment of Cancer.**—The results obtained by the authors were reviewed in an editorial, p. 706.

69. **Achievements of Endoscopy in Cases of Foreign Bodies in Air Passages and Esophagus.**—Killian is justly delighted with the results of bronchoscopy and esophagoscopy made possible by the new methods of direct inspection. He cites twenty-two communications on the subject that have been published, with his own, by such men as Mikulicz, von Hacker and Enderlen. The entire bronchial tree can be inspected by his method of bronchoscopy, and it has been done 20 times to date, in 11 by himself. Half of the patients were children from 2 to 12 years old. High bronchoscopy was successful in locating the foreign body in 9 out of 11 cases. In one of the 2 in which it failed, the foreign body was coughed up later and proved to be a scrap of down. In the other case a large needle was imbedded in a growth of fibrous tissue. Low bronchoscopy was successful in all of the 9 cases in which it was applied. In 2 cases it confirmed the physician's assumption that the foreign body supposed to have been drawn into the lungs was imaginary. Extraction of the foreign body by the aid of the bronchoscopic findings was attempted in 15 cases and was successful in all but 2. In one of these cases proper instruments were unattainable, and in the other the foreign body was lodged in an abscess with a minute opening. Both subjects died. Only one of the other patients died, and death in this instance was due to pleuritis nine months later on the non-affected side.

70. **Determination of Potassium Iodid in the Blood.**—Karfunkel applies the principles of pleochromism, that is, the absorption of colored rays, to the differentiation of crystals of hemin after ingestion of potassium iodid. He uses a Nicol prism and observes the effect of the light on the crystals as viewed at different angles. Halogen hemin crystals are dark colored when viewed in a plane parallel with the axis of the prism, but at an angle of 90 degrees they are lighter and transparent. Iodin-hemin crystals, on the other hand, retain about the same tint at all angles. He states that he has been able to determine the presence of iodin in the blood by this means as early as five minutes after ingestion of 1 to 2 gm. of potassium iodid. He has also detected iodin in the blood five to six days after the last dose of 2 gm. of sodium or potassium iodid.

81. **Intra-Uterine Colpeurynter in Obstetrics.**—Zimmermann has collected 645 cases in which supra-cervical metreurysis was applied, including 129 previously unpublished. The indications for it are 1, necessity for premature delivery; 2, for dilation of the os in pathologic conditions; 3, placenta previa. It is pre-eminently useful in the latter condition as it arrests hemorrhage, does not endanger the fetus and prepares the way for safe natural delivery after expulsion of the colpeurynter. He advises introducing the inflatable bag without interfering with the membranes, as the mortality of the children and the morbidity of the mothers are much less when this caution is observed. The results of metreurysis have been remarkably fine, and he recommends the intra-uterine colpeurynter as "a most blessed progress in the domain of modern obstetrics, on account of its reliability and usefulness, the simplicity of its application and the certainty of success in the most varied complications of delivery." By introducing the soft rubber bag between the membranes and the wall of the uterus, it is possible to induce delivery at any stage of pregnancy, in case of placenta previa, and always with ease and the certainty of arresting any possible hemorrhage from this source. It is gradually distended with water to a maximum of 500 gm. As soon as the pear-shaped bag is expelled, the child should be delivered at once. In attempts to induce premature delivery, after seven or eight hours' distension, if about 100 to 200 c.c. of the fluid in the bag are allowed to escape suddenly, the conditions of pressure are altered and the uterus stimulated to more energetic contractions. The bag of waters should always be preserved intact except in case of hydramnion. Only 27 deaths occurred in the total 645 cases. This includes 7 deaths from placenta previa and 8 in eclampsia. In only 7 could the death by any possibility be attributed to the obstetric maneuvers, and in 3 of these the technic was faulty and contrary to his express directions. In 3 others infection was traced to bougies previously employed. In the one fatal personal case death was due to varices that ruptured during extraction of twins, complicated by atony of the uterus.

82. **Diagnosis and Treatment of Exudates.**—Dützmann proclaims that local superheated air is the best method of treating fresh purulent exudates and also the remains of an old exudate. In the first case it favors reabsorption and in the second category it softens and melts the cicatricial adhesions and relics of the exudate. The superheated air sends the blood coursing through the veins of the region and favors the vital processes. He has had an experience of 20 cases and several times found that a hard tumor became soft and fluctuating under the influence of the local heat, until evacuation was possible and a complete cure. After its application the patient is sponged off with cold water. In old exudates the heat causes marked leucocytosis. He recommends tinting the acetic acid in the blood count with strong methylene blue. The field is read more easily and does not tire the eye. In an experience with 163 cases the blood count invariably showed leucocytosis when there was suppuration, and its absence in cases free from suppuration. These findings were corroborated by the operation even in many cases in which the physical signs seemed to indicate the contrary. In one case, for example, the history and palpation suggested the presence of carcinoma, but the leucocytes numbered 17,500, and the operation revealed merely a pyometra. In another case the suppurating softening of a tubal gestation was recognized as such by the blood count. The leucocytes were always exceptionally numerous, up to

20,000 or 30,000, when streptococci were found in the pus, while the figures were lower, 11,000 to 13,000, in cases with the gonococcus or bacterium coli, even when the suppuration was very extensive. He also noticed that in 12 cases of peritonitis and sepsis in which the leucocytes were exceptionally numerous, the patients all recovered, notwithstanding high and protracted fever and bad general condition. On the other hand, all the febrile cases accompanied with normal or subnormal leucocyte count, terminated fatally. When the organism is no longer able to react by summoning hordes of leucocytes to its aid, its resisting power is inadequate to cope with the infection.

84. **Clinical Study of the Menopause.**—Kleinwächter had occasion to observe the course of the menopause in 739 out of 6981 gynecologic patients. In 34.85 per cent. it commenced before the age of 45. In 4.82 per cent. before 30. In 5 it followed a violent metrorrhagia at childbirth. In 8, prolonged or repeated lactation was followed by premature menopause. In one it occurred at 20 as a result of severe puerperal infection. In 48 women who had borne from 7 to 8 children, it occurred before 45, while in 121 others with the same number of children, it did not appear until after the physiologic limit. Among the various points he notices is the importance of differentiating between senile endometritis and carcinoma. The former may persist indefinitely, but carcinoma of the fundus terminates fatally in a year to a year and a half, consequently the duration of the affection is an aid in differentiating. The first symptom of the endometritis is a fetid, seropurulent discharge, usually intermittent. In carcinoma of the fundus there is no discharge at first and when it appears it is bloodstained. Endometritis is very rarely accompanied by bleeding and it is trifling if it occurs, while this symptom never fails in carcinoma of the fundus. The pains from senile endometritis are colicky, subside as the patient reclines and are not violent. The uterus feels soft and flabby, while it is hard in case of carcinoma, and passive movements cause severe pain. The uterus must be straightened if displaced, and a free outlet for the secretions provided, rinsing the uterus with a very weak antiseptic. The mucosa of vagina and uterus in these cases has so little vitality that only the mildest measures can be applied. He encountered 7 cases of senile endometritis; the uterus was in normal position in all. He mentions that carcinoma of the uterus was observed in only .97 per cent. of 6672 Jewesses, while the proportion was 6.35 per cent. in 1228 other women. Carcinoma of the mamma was noted in .18 of 5987 Jewesses and in .6 of 984 other women.

85. **The Cautery Eschar in the Abdominal Cavity.**—Franz experimented on 35 rabbits, using the Paquelin in the abdominal cavity and then watching the fate of the eschar with or without infection. He found that points in the cavity left denuded of peritoneum did not develop any adhesions when aseptic. On the other hand, the eschars resulting from the application of the thermocautery created a predisposition to adhesions and also favored the development of infection.

86. **Myoma and Heart.**—Kessler describes a case of myoma in the fundus uteri in a woman of 54. It had grown to a weight of 60 pounds. The heart under the microscope showed lesions of myofibrosis cordis while the coronary arteries were free from sclerosis. He believes that the microscope would probably reveal lesions in the heart in all such cases. Even a small myoma imposes a certain extra task on the heart by its hindrance to the circulation, and long continuance entails degeneration of the heart in time. If further research confirms this theory of the inevitable degeneration of the heart in cases of myoma, then the necessity of prompt removal of all myomata follows as a matter of course. It prevents future hemorrhages from the myoma. By enucleating the myoma according to Olshausen, the integrity of the reproductive organs is maintained.

87. **Treatment of Retroversio-Flexio Uteri.**—Koblanck reports the results of 23 cases operated on according to Wertheim by vaginofixation of the round ligament. The position of the uterus approximates the normal more closely than after any other operative measure. It can be combined with any desired plastic operation or intervention on the adnexa, and is equally applicable to movable as well as to firmly fastened retroflexion. The uterus retains all its mobility and capacity of distension. [Bucura describes in the succeeding number the anatomic findings in a case operated on by this technic.—ED.]

88. **Post-Partum Hemorrhages.**—This communication issues from Olshausen's clinic and describes among other things his method of arresting hemorrhage by compressing the abdominal aorta. The uterus is pushed up out of the small pelvis with the palm of the right hand. The pulsating aorta can then be palpated just above the promontory and compressed with the thumb and forefinger of the left hand. Gently rubbing the uterus with the right palm, as this is done, may stimulate it to contract. Compression of the aorta should not be kept up for more than seven to ten minutes, but this allows time for the preparations to be made to rinse out the uterus with hot water. The patients complain of tingling and coldness in the limbs after seven to ten minutes. Atony of the uterus is sometimes due to the chloroform. He therefore restricts its use as much as possible and does not commence to administer it until everything is in readiness, and stops it the moment the clitoris reflex is abolished. He warns that fatal hemorrhage may occur from a laceration in the cervix without a drop of blood emerging from the vagina. Over 2.5 quarts of blood had thus escaped into an experitoneal pocket in one of his cases, supposed to be doing well. Since this occurred he never leaves a patient without carefully palpating the abdomen. When the hemorrhage from a tear in the cervix persisted in spite of tamponing, he ligated both uterine arteries in 6 cases with immediately successful results.

89. **Etiology of Post-Partum Hemorrhages in Certain Cases.**—In Ahlfeld's case the fatal hemorrhage was attributed to atony of the uterus, but investigation of the blood showed an abnormal absence of fibrinogen and an unusually small proportion of organic elements. Coagulation was impossible, but was easily induced in the blood *in vitro* by addition of a little fibrinogen.

91. **Prophylaxis of Puerperal Mastitis.**—Ahlfeld keeps on hand a mixture of 100 gm. tannin in 1000 gm. of 96 per cent. alcohol. Every second day the nipple is washed with water and after it is dry it is swabbed with this fluid which is allowed to dry spontaneously before the clothing is replaced. He has scarcely had a case of suppurative mastitis in his experience during the two years since this measure has been systematically applied. He applies ice bags day and night to abort an incipient mastitis.

95. **Iron in Pigment of Skin and Urine During Pregnancy.**—Wychgel announces that the pigment of the skin and urine of pregnant women contains decidedly more iron than those of non-pregnant women. It must be derived from hemoglobin. He suggests that possibly this hemolysis may be due to the sweeping away of fragments of villi and the consequent production of cytotoxins in the serum.

104. **Surgery of Undescended Testicle.**—Ploc reports 16 patients between 4 and 29 years of age, operated on with satisfactory results. There was complicating hernia in 11. The ectopic testicle swells and causes pain as puberty advances. In 9 the results were ideal and all were freed from their previous disturbances. He describes his technic with numerous illustrations.

105, 106. **Radiographic Differentiation of Syphilitic and Tubercular Bone Affections.**—Kienböck illustrates the radiographic findings in 31 cases, but remarks that radiography alone is scarcely able to differentiate a bone lesion, although it is a most valuable supplementary aid. It has shown, for instance, that acute atrophy of the bones usually accompanies infectious osteomyelitis and tuberculosis, adjacent to or even at some distance from the focus. This disturbance in the nutrition of the bone is not observed in case of a syphilitic affection, and neither are there alterations of the skin and muscles as in the former case. Gummatous tissue casts a shadow characteristic in shape, location and saturation.

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107. **Lang's Hot Air Apparatus.**—Spitzer reports the results of treatment of 32 patients with lupus by the application of superheated air. Lang uses for the purpose an ordinary Paquelin provided with a curved, conical cap open at the tip. Air is forced into the cap heated by the thermocautery and projected from the tapering cap in a fine stream. An asbestos ring protects the operator's hand from returning hot air. The air is supplied by two rubber bulbs squeezed alternately so that the supply is continuous. The burns thus induced were not accompanied by the general symptoms of ordinary burns. Albumin never appeared in the urine and the general health showed no disturbance. The instrument has been used during the last year and one-half and was applied forty-five times. The short course of the treatment, the fine soft scars, its applicability to extensive surfaces, its ready use by any general practitioner, and especially the fact that recurrences seem to be less frequent after it than after any other method, commend it for general adoption. The small instrument can be manipulated as easily as a pencil. The burned patches heal over in less than half the time than after Paquelinization. By the third day a resorcin salve can be substituted for the moist compresses applied at first. This treatment has proved particularly effectual in old cases with elephantiasic indurations.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, Other Than Drug-Giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis-Cohen, A. M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. Volume IX. Hydrotherapy, Thermotherapy, Heliotherapy, and Phototherapy. By Dr. Wilhelm Winternitz, Professor of Clinical Medicine in the University of Vienna. Assisted by Dr. Alois Strasser and Dr. B. Buxbaum; and Balneology and Crounotherapy by Dr. E. Heinrich Kisch. Illustrated. Cloth. Pp. 570. Price, $27.50 per set. Philadelphia: P. Blakiston's Son & Co. 1902.

The International Text-Book of Surgery. In Two Volumes. By American and British Authors. Edited by J. Collins Warren, M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Harvard Medical School; and A. Pearce Gould, M.S., F.R.C.S., of London, England. Second Edition, Thoroughly Revised and Enlarged. Vol. I. General and Operative Surgery. Royal Octavo of 965 Pages, with 461 Illustrations, and 9 Full-paged Colored Lithographic Plates. Vol. II. Special or Regional Surgery. Royal Octavo of 1122 Pages, with 499 Illustrations, and 8 Full-paged Colored Lithographic Plates. Cloth. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Diseases of the Stomach. Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy, Physiology, Chemical and Microscopical Examination of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By John C. Hemmeter, M.D., Ph.D., Professor in the Medical Department of the University of Maryland, Baltimore. With Many Original Illustrations, a Number of Which Are in Colors and a Lithograph Frontispiece. Third Enlarged and Revised Edition. Cloth. Pp. 804. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Dr. H. Helferich, Professor of Surgery at the Royal University, Greifswald, Prussia. Edited, with Additions, by Joseph C. Bloodgood, M.D., Associate in Surgery, Johns Hopkins University, Baltimore. From the Fifth Revised and Enlarged German Edition. With 216 Colored Illustrations on 64 Lithographic Plates, 100 Text-Cuts, and 353 Pages of Text. Cloth. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Diseases of the Rectum and Anus. Designed for Students and Practitioners of Medicine. By Samuel Goodwin Gant, M.D., LL.D., Professor of Rectal and Anal Surgery at the New York Post-Graduate Medical School and Hospital. Second Edition, Rewritten and Enlarged, with 37 Full-page Plates, 20 of Which Are in Colors, and 212 Smaller Engravings and Half-tones. Pages, xxiv-687. Royal Octavo. Extra Cloth. Price, $5.00 net. Philadelphia: F. A. Davis Company.

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (3d) Edition. Enlarged and Thoroughly Revised. In One Very Handsome Octavo Volume of 756 Pages, with 474 Engravings, of Which 60 Are in Colors and 22 Colored Plates. Cloth. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology. By George F. Butler, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, etc. Fourth Edition, Thoroughly Revised. Handsome Octavo Volume of 896 Pages, Illustrated. Cloth, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Hand-Book of Medical and Orthopedic Gymnastics. By Anders Wide, M.D., Lecturer in Medical Gymnastics and Orthopedy in the Royal Carolean Medico-Surgical Institute and Director of the Gymnastic Orthopedic Institute, Stockholm. With a Frontispiece and 94 Illustrations in the Text. Second Revised Edition. Cloth. Pp. 373. Price, $3.00 net. New York: Funk & Wagnalls Co. 1902.

A Text-Book of the Surgical Principles and Surgical Diseases of the Face, Mouth, and Jaws. For Dental Students. By H. Horace Grant, A.M., M.D., Professor of Surgery and of Clinical Surgery, Hospital College of Medicine. Octavo Volume of 231 Pages, with 68 Illustrations. Cloth. Price, $2.50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

A Text-Book of Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Illustrated with 236 Engravings and 25 Plates. Cloth. Pp. 698. Price, $500. Philadelphia and New York: Lea Brothers & Co. 1902.

Essentials of Histology. By Louis Leroy, B.S., M.D., Professor of Histology and Pathology, Vanderbilt University, Medical and Dental Departments. Second Edition, Thoroughly Revised and Greatly Enlarged. 16mo. Volume of 263 Pages, with 92 Beautiful Illustrations. Cloth. Price, $1.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

A Text-Book on Diseases of Infancy and Childhood. For the Use of Students and Practitioners. By Henry Koplik, M.D., Attending Physician to Mt. Sinai Hospital, New York. Illustrated with 169 Engravings and 30 Plates in Color and Monochrome. Cloth. Pp. 675. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1902.

The Treatment of Fractures. By Chas. L. Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard Medical School. Third Edition, Revised and Enlarged. Octavo, 480 Pages, with 645 Original Illustrations. Polished Buckram. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia. Third Edition, Thoroughly Revised. 16mo. Volume of 214 Pages, with 114 Illustrations. Cloth. Price, $1.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Photographic Atlas of the Diseases of the Skin. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York. Part XV. Philadelphia and London: J. B. Lippincott Co. 1902.

Typhoid Fever. By J. T. Moore, M.D., M.C.P. S., Professor of Theory and Practice of Medicine, Medical Department of Hamline University, Minneapolis, Minn. Pp. 159. Price, $1.00 net. Chicago: G. P. Engelhard & Co. 1902.

General Paresis: Practical and Clinical. By Robert Howland Chase, A.M., M.D., Physician-in-Chief, Friends Asylum for the Insane. Illustrated. Cloth. Pp. 291. Price, $1.75. Philadelphia: P. Blakiston's Son & Co. 1902.

Transactions of the American Dermatological Association, at Its Twenty-first Annual Meeting, Held in Chicago, Ill., May 30 and 31, and June 1, 1901. Cloth. Pp. 216. New York: Rooney & Otten Printing Co. 1902.

Transactions of the American Microscopical Society. Twenty-fourth Annual Meeting Held in Denver, Colo., Aug. 29, 30 and 31, 1901. Vol. XXIII. Paper. Pp. 294. Lincoln, Neb.: Jacob North & Co., Printers. 1902.

Annual Report of the Essex County Hospitals for the Insane, Newark, N. J., for the Year Ending April 30, 1902. Paper. Pp. 102. Newark, N. J.: Grocbe-McGovern Co. 1902.

Proceedings of the Philadelphia County Medical Society, September, 1902. Paper. Pp. 238. Philadelphia: Published by the Society.

Proceedings of the New York Pathological Society. May, 1902. Paper. Pp. 87. New York: Published by the Society.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 11 to 17, 1902, inclusive:

Irvin E. Bennett, captain and asst.-surgeon, Vols., honorably discharged from the service of the United States, to take effect Oct. 15, 1902, his services being no longer required.

Henry L. Brown, contract surgeon, leave of absence for two months granted.

Justus M. Brown, colonel and assistant surgeon-general, leave of absence for three months granted, to take effect upon the assignment of a medical officer to take charge of the medical supply depot in New York City, during his absence.

Carl E. Darnall, captain and asst.-surgeon, in addition to his present duties in the office of the surgeon-general, is detailed as assistant professor of hygiene at the Army Medical School, Washington, D. C.

William O. Davies, captain and asst.-surgeon, Vols., honorably discharged, to take effect Oct. 15, 1902, his services being no longer required.

Calvin DeWitt, colonel and assistant surgeon-general, is detailed president of the faculty of the Army Medical School, relieving Colonel Charles Smart, assistant surgeon-general.

Alfred C. Girard, colonel and assistant surgeon-general, is relieved from further duty in the office of the surgeon-general of the Army; he will remain in Washington, D. C., as a member of certain examining boards.

Joseph B. Girard, colonel and assistant surgeon-general, on being relieved from duty at Honolulu, will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for orders.

John N. Goltra, contract surgeon, from Fort Brady, Mich., to duty at Fort Assiniboine, Mont.

George H. R. Gosman, lieutenant and asst.-surgeon, is relieved from duty at Fort Hancock, N. J., and assigned to temporary duty at Fort Wadsworth, N. Y.

John D. Hall, lieutenant-colonel and deputy surgeon-general, on being relieved from duty at the medical supply depot at San Francisco, will report for transportation to Manila, P. I., for assignment to duty in the Division of the Philippines.

Eugene H. Hartnett, lieutenant and asst.-surgeon, leave of absence extended.

Philip F. Harvey, lieutenant-colonel and deputy surgeon-general, relieved from duty as chief surgeon, Department of California, to proceed to Chicago, for duty as chief surgeon, Department of the Lakes.

Charles L. Helzmann, colonel and assistant surgeon-general, from duty as chief surgeon, Department of the Lakes, to San Francisco, for duty as chief surgeon, Department of California.

Jefferson R. Kean, major and surgeon, having relinquished the unexpired portion of his leave of absence, will report in person to the surgeon-general of the Army for duty in his office.

Reynold M. Kirby-Smith, lieutenant and asst.-surgeon, detailed a member of an examining board at Fort Barancas, Fla., vice Frederick E. Jenkins, contract surgeon, relieved.

Louis M. Maus, lieutenant-colonel and deputy surgeon-general, having reported his arrival in San Francisco, Cal., will assume charge of the medical supply depot in that city, relieving Lieut.-Col. J. D. Hall, deputy surgeon-general.

Walter D. McCaw, major and surgeon, is relieved from duty at Fort Wadsworth, N. Y., and will report in person to the surgeon-general for duty in his office and as a member of the faculty of the Army Medical School.

William F. de Niedeman, major and surgeon, Vols., so much of former orders as directed his honorable discharge to take effect Oct. 15, 1902, is amended so as to make it take effect Sept. 11, 1902, he having tendered his resignation. Henry O. Perley, major and surgeon, U. S. A., member of an Army retiring board convened at Jefferson Barracks, Mo.

Edwin W. Rich, lieutenant and asst.-surgeon, now on duty at the General Hospital, San Francisco, will proceed to Honolulu, H. I., for temporary duty, relieving Colonel Joseph B. Girard, assistant surgeon-general.

Henry A. Shaw, captain and asst.-surgeon, relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, where on arrival he will report by telegraph to the adjutant-general for orders.

Harry H. Van Kirk, contract surgeon, leave of absence for two months granted, to take effect about Nov. 1, 1902.

Philip G. Wales, captain and asst.-surgeon, will report in person at the Army Medical Museum Building, Washington, D. C., to the president of the examining board for examination to determine his fitness for promotion and thereafter to return to his proper station.

Llewellyn P. Williamson, lieutenant and asst.-surgeon, leave of absence from the Department of the Missouri extended fifteen days.

James S. Wilson, captain and asst.-surgeon, from New York City, to Fort Riley, Kan., for temporary duty in connection with the military maneuvers to be held at that station in September and October, 1902, on the completion of which duty he will return to his proper station.

Francis A. Winter, captain and asst.-surgeon, member of a retiring board at Jefferson Barracks, Mo.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Sept. 20:

Medical Director W. G. Farwell, ordered to Philadelphia, for duty in connection with recruiting.

Surgeon C. Biddle, detached from Naval Recruiting Station, Philadelphia, and to duty at York, Pa., with recruiting party.

P. A. Surgeon C. D. Brownell, detached from Naval Hospital, Chelsea, Mass., and ordered to the *Panther*.

P. A. Surgeon J. B. Dennis, detached from the *Hartford*, and ordered to the *Brooklyn*.

Asst.-Surgeon R. R. Williams, discharged from treatment at Naval Hospital, Newport, R. I., and ordered to the U. S. T. B. *Decatur*.

Asst.-Surgeon J. H. Payne, detached from the *Brooklyn*, and ordered to Naval Hospital, Newport, R. I.

Asst.-Surgeon F. M. Munson, detached from duty on the *Decatur* and ordered to the Naval Hospital, Washington, D. C.

Asst.-Surgeon R. E. Hoyt, detached from Naval Hospital, Newport, R. I., and ordered to the Naval Academy.

Surgeon J. W. Ross, retired, detached from the Navy Yard, Pensacola, Fla., and ordered to the Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon J. H. Iden, detached from the *Lancaster*, and ordered to the *Topeka*.

Surgeon J. E. Gardner, ordered to the Yokohama Hospital.

Pharmacist R. Waggener, detached from Naval Station, Key West, Fla., and ordered to the Navy Yard, Pensacola, Fla.

Surgeon A. M. D. McCormick, detached from the Naval Academy, Annapolis, Md., September 20, and ordered to the *Hartford*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Sept. 18, 1902:

Surgeon A. H. Glennan, granted leave of absence for six days from Sept. 15, 1902.

P. A. Surgeon C. N. Gardner, granted leave of absence for one day, Sept. 18, 1902.

P. A. Surgeon John McMullen, relieved from duty in office of Consul-General of the United States at London, England, and directed to proceed to Hong Kong, China, as inspector for a period of two weeks; then to assume command of service at that port, relieving Asst.-Surgeon J. W. Kerr.

P. A. Surgeon A. R. Thomas, directed to proceed to San Francisco, and report to medical officer in command for duty and assignment to quarters.

Asst.-Surgeon Carl Ramus, granted leave of absence for one month from Sept. 25, 1902.

Asst.-Surgeon Carroll Fox, granted leave of absence for seven days from Sept. 15, 1902.

Asst.-Surgeon Carroll Fox, relieved from duty in the office of United States Consul at Liverpool, England, and directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

Asst.-Surgeon C. W. Vogel, relieved from duty at Dutch Harbor, Alaska, to take effect upon departure from that port of last revenue cutter, and directed to proceed to San Francisco, and report to the medical officer in command for duty and assignment to quarters.

A. A. Surgeon L. C. Bean, granted leave of absence for one day, Sept. 14, 1902.

A. A. Surgeon F. H. Cleaves, granted leave of absence for fourteen days from Sept. 9, 1902.

Pharmacist G. C. Allen, to report to medical officer in command at Baltimore, for temporary duty during the absence on leave of Pharmacist E. B. Scott.

Pharmacist M. R. Mason, relieved from duty at Dutch Harbor, Alaska, on closing of station, and directed to proceed to San Francisco, and report to the medical officer in command for duty and assignment to quarters.

BOARD CONVENED.

Board convened at the U. S. Marine-Hospital, Chelsea, Mass., Sept. 23, 1902, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon L. M. Woodward, chairman; Asst.-Surgeon W. K. Ward, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 19, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 31-Sept. 7, 4 cases.
Colorado: Denver, Aug. 30-Sept. 6, 2 cases.
District of Columbia: Washington, Sept. 17, 2 cases.
Florida: Escambia County, Pensacola included, Sept. 6-13, 3 cases.
Illinois: Chicago, Sept. 6-13, 1 case.
Kansas: Wichita, Aug. 24-31, 1 case.
Kentucky: Covington, Aug. 30-Sept. 6, 6 cases.
Massachusetts: Boston, Sept. 6-13, 7 cases, 3 deaths; Chelsea, Sept. 6-13, 1 case; Fitchburg, Aug. 30-Sept. 6, 1 case.
Missouri: St. Joseph, Sept. 6-13, 1 case.
New Jersey: Newark, Sept. 6-13, 3 cases, 1 death; Passaic, Aug. 30-Sept. 13, 2 cases.
New York: New York, Sept. 6-13, 6 cases, 3 deaths.
Ohio: Cincinnati, Sept. 5-12, 3 cases; Cleveland, Sept. 6-13, 84 cases, 16 deaths; Hamilton, Sept. 6-13, 1 case.
Pennsylvania: Altoona, Sept. 6-13, 1 case; Johnstown, Sept. 6-13, 9 cases, 1 death; McKeesport, Sept. 6-13, 16 cases; Philadelphia, Sept. 6-13, 6 cases; Pittsburg, Sept. 6-13, 25 cases, 1 death; Reading, Sept. 8-15, 5 cases.
South Carolina: Charleston, Sept. 6-13, 3 cases.
Tennessee: Memphis, Sept. 6-13, 1 case.
Wisconsin: Milwaukee, Sept. 6-13, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Aug. 1-15, 11 deaths.
Ecuador: Guayaquil, Aug. 23-30, 3 deaths.
France: Paris, Aug. 16-23, 1 death.
Gibraltar: Aug. 24-31, 1 case.
Great Britain: Aug. 23-30, Liverpool, 14 cases; London, 11 cases 2 deaths.
India: Bombay, Aug. 13-19, 4 deaths; Calcutta, Aug. 9-16, 2 deaths.
Russia: Moscow, Aug. 16-23, 2 cases, 1 death; Odessa, Aug. 24-31, 4 cases; St. Petersburg, Aug. 16-23, 12 cases, 1 death.
Spain: Barcelona, Aug. 16-30, 4 deaths.

YELLOW FEVER.

Colombia: Panama, Sept. 1-8, 4 cases, 1 death, among soldiers.
Ecuador: Guayaquil, Aug. 16-23, 1 death.
Mexico: Coatzmalcos, Aug. 30-Sept. 6, 4 cases; Orizaba, Sept. 7, epidemic; Progreso, Sept. 12, 1 case; Vera Cruz, Aug. 30-Sept. 13, 45 cases, 7 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 12-19, 250 cases, 189 deaths; Provinces, to July 19, 13,555 cases, 11,691 deaths.

CHOLERA—FOREIGN.

China: Amoy, July 27-Aug. 2, 40 cases estimated; Hongkong, Aug. 2-9, 6 cases, 6 deaths; New Chwang, July 19-Aug. 2, 175 cases, 145 deaths.
Egypt: Alexandria, Aug. 5-27, 17 cases, 12 deaths; Cairo, July 22-Aug. 27, 913 cases, 816 deaths.
India: Bombay, Aug. 13-19, 1 death; Calcutta, Aug. 9-16, 4 deaths.
Japan: To Aug. 18, Ehime Ken, 39 cases; Formosa, 213 cases, 133 deaths; Fukuoka Ken, 671 cases, 372 deaths; Hioga Ken, 12 cases, 6 deaths; Hiroshima Ken, 2 cases; Kagawa Ken, 606 cases; Humamota Ken, 11 cases, 4 deaths; Kyoto Ken, 14 cases, 2 deaths; Nagasaki Ken, 90 cases, 31 deaths; Oita Ken, 12 cases, 4 deaths; Okayama Ken, 1,268 cases, 783 deaths; Osaka Ken, 96 cases, 5 deaths; Saga Ken, 88 cases, 53 deaths; Shimana Ken, 5 cases; Tokushima Ken, 1 case; Tokyo Ken, 5 cases, 4 deaths; Wakayama Ken, 1 case; Yamanashi Ken, 90 cases, 1 death.
Java: Batavia, July 27-Aug. 2, 32 cases, 25 deaths.
Russia: Chabarowsk, July 28-Aug. 7, 11 cases, 8 deaths; Olowjannaja, to Aug. 8, 8 cases, 5 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 31-Sept. 7, 3 deaths, Chinese.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 2-9, 34 deaths.
India: Bombay, Aug. 13-19, 35 deaths; Calcutta, Aug. 9-16, 9 deaths.
Japan: Yokohama, Aug. 9-16, 16 cases, 4 deaths.